

**MATANUSKA-SUSITNA BOROUGH**

350 E Dahlia Ave., Palmer, Alaska 99645

**CHAIRPERSON**

Mike Wood

**VICE CHAIR**

Andy Couch

**MSB STAFF**

Ted Eischeid



**BOARD MEMBERS**

Howard Delo

Larry Engel

Tim Hale

Peter Probasco

Jesse Sumner

Kendra Zamzow

*Ex officio:* Jim Sykes

# FISH AND WILDLIFE COMMISSION

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**Planning and Land Use Department - Planning Division**

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**MATANUSKA-SUSITNA BOROUGH**  
**MSB Fish and Wildlife Commission Agenda**

Edna DeVries, Mayor

Mike Wood – Chair  
Andy Couch – Vice Chair  
Howard Delo  
Larry Engel  
Tim Hale  
Peter Probasco  
Jesse Sumner  
Kendra Zamzow  
*Ex Officio – Jim Sykes*

Ted Eischeid - Staff



Michael Brown, Borough Manager

PLANNING & LAND USE DEPARTMENT  
Alex Strawn, Planning & Land Use Director  
Kim Sollien, Planning Services Manager  
Jason Ortiz, Development Services Manager  
Fred Wagner, Platting Officer

*Dorothy Swanda Jones Building  
350 E. Dahlia Avenue  
Palmer ak 99645*

**February 17, 2022**  
**REGULAR MEETING**

4:00 p.m.

Lower Level Conference Room

**Ways to participate in MSB Fish and Wildlife Commission meetings:**

IN PERSON: LLCR, DSJ Building, 350 E. Dahlia Ave., Palmer

REMOTE:

- TEAMS LINK/CALL IN INFORMATION HERE!
- State your name for the record, spell your last name, and provide your testimony.

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## Microsoft Teams meeting

- **Join on your computer or mobile app**
  - [Click here to join the meeting](#)
  - **Or call in (audio only)**
  - [+1 907-290-7880,,92914080#](#) United States, Anchorage
  - Phone Conference ID: **929 140 80#**
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  -
- 

I. CALL TO ORDER

II. ROLL CALL – DETERMINATION OF QUORUM

III. LAND ACKNOWLEDGEMENT

*We acknowledge that we are meeting on traditional lands of the Ahtna and Dena'ina people, and we are grateful for their stewardship of the land, fish, and wildlife throughout time immemorial.*

- IV. APPROVAL OF AGENDA
- V. PLEDGE OF ALLEGIANCE
- VI. APPROVAL OF MIUTES
  - A. January 20, 2022, Regular Meeting Minutes
- VII. AUDIENCE PARTICIPATION (*three minutes per person, for items not scheduled for public hearing*)
- VIII. STAFF/AGENCY REPORTS & PRESENTATIONS
  - A. State Legislative Report/Dialogue – Rep. Kevin McCabe
  - B. Wasilla BOG Meeting – AC/HD
  - C. Staff Report - TE
- IX. UNFINISHED BUSINESS
  - 1. Moose Management Letter to ADFG
  - 2. Susitna Basin Gas Exploration License Comment
- X. NEW BUSINESS
  - 1. AK DNR Cottonwood Creek Water Reservation Comment
  - 2. Impacts of hatchery-released pink salmon on other salmon species
- XI. MEMBER COMMENTS
- XII. NEXT MEETING DATE: March 17, 2022 - LLCR
- XIII. ADJOURNMENT

**Disabled persons needing reasonable accommodation in order to participate at a MSB Fish and Wildlife Commission Meeting should contact the borough ADA Coordinator at 861-8432 at least one week in advance of the meeting.**



**MSB FISH AND WILDLIFE COMMISSION Regular Meeting: Jan. 20, 2022 – Minutes**

DSJ Building, MSB Assembly Chambers //TEAMS Remote Participation Option

*Minutes prepared by Ted Eischeid, Planner II***January 20, 2022 REGULAR MEETING 4:00 PM**

- I. CALL TO ORDER by chair Mike Wood at 5:05 PM.
- II. ROLL CALL - DETERMINATION OF QUORUM/LAND ACKNOWLEDGEMENT
- PRESENT: Mike Wood (MW), Howard Delo (HD), Andy Couch (AC), Larry Engel (LE), Kendra Zamzow (KZ), Tim Hale (TH), Jim Sykes (JS).
  - Absent: Tim Hale, Pete Probasco (excused), Jesse Sumner.
  - Quorum established.
  - MW read the LAND ACKNOWLEDGEMENT.
- III. APPROVAL OF AGENDA
- Motion to approve the agenda made by LE; seconded by KZ
  - Amendment to motion- MW requested to change the order by moving WSAR up to after the northern pike presentation. LE. Second. Amendment passes unanimously.
  - ***No objection to motion to approve agenda as amended; motion passes unanimously.***
- IV. PLEDGE OF ALLEGIANCE
- V. Approval of Minutes
- Dec. 13 Special Meeting Minutes:  
Dec. 13 LE moved, KZ second.
- AC: Moved to postpone to next meeting for correction; LE second. Passed
- Dec. 16 Regular Meeting Minutes:
- Motion to approve by LE, second by AC. HD: noted that in section V. Minutes are misspelled.
- Motion to approve Dec. 16 minutes as corrected passed unanimously.
- VI. INTRODUCTIONS
- Tim Hale.
  - Becky Long – Susitna Valley gas licenses; extension to Feb. 21. (4:12); wants FWC to support WACO letter.
  - Stephanie Nowers
  - Krissy Dunker, ADFG
  - Gerrit Verbeek, MSB Staff.

- Jim McDonough, Fishhook – MEA Powerline issue; Jan. 19 hearing; two routes, northern and southern; majority of testimony called for southern route as approved. Request that FWC consider this issue and resolution. MW: Susitna Rivers Mgmt Plan addresses powerlines crossing rec rivers.
- Paul Warta
- Stephen Braund, NDSNA
- Tam Boeve, Susitna gas lease will impact Willow, thanks McDonoughs for their involvement.
- Maija DiSalvo, MSB Staff
- Daniel George, Congressman Young staff: available to folks, Magnuson-Stevens Act, brief update on bills: reauthorization of Magnuson-Stevens Act work (last done in 2006), competing bill from Rep. Huffman (CA);
- Bill Stoltze, Lobbyist; BOF/BOG bill on appointees; Sen. Micciche's ESSN permit buy back bill; Rep. Tilton wanted a fisheries update for the Mat-Su legislative delegation – Showers wants presentation in State Affairs committee, Sen. Revak's and Rep. Tarr's committees also have an interest in a FWC presentation; could do a remote and an in-person visit.
- Neil Dewitt, interested in red p. 33 of packet.

## VII. STAFF/AGENCY REPORTS & PRESENTATIONS

### A. Northern Pike, Aquatic Invasive – Parker Bradley, ADFG

### B. Unfinished Business Item 3 -WSAR Update: Stefan Hinman (SH).

- Public Involvement Plan (PIP): project web site, online sign up form, two public meetings; these comments plus testimony given to Assembly in Dec. 2021 will be summarized and presented to Assembly in April 2022.
- AIDEA will have a separate public engagement program.
- Sykes: Also mentioned a comment summary, but in the past this has been perfunctory and not useful; will there be verbatim comments preserved in the summary?
- LE: any way FWC could assist with this public engagement effort? SH: Yes, we are still in the planning stage so we can consider FWC wishes; LE – this is an important issue to the FWC and we would like to stay close to this issue;
- Becky Long, lots of public engagement at the December 2021 meeting; is the \$50K assembly outlay covering this cost?
- MW: are the comments being submitted being used for future federal permitting? SH: Yes; MW: has this issue been decided? Glad the MSB is doing the outreach.

C. Staff Report - Ted Eischeid

VIII. UNFINISHED BUSINESS

1. Selection of FWC Chair/Vice Chair for 2022

***Turn it over to Ted to lead (without objection)***

***Chair nomination: LE nominated MW as chair; AC nominated himself. No further nominations.***

***Candidate statements.***

***Roll call vote (voter: chair vote):***

***MW: Mike Wood***

***HD: Mike Wood***

***AC: Andy Couch***

***LE: Mike Wood***

***TH: Mike Wood***

***KZ: Mike Wood***

***--***

***Chair Roll Call RESULTS:***

***Mike Wood = 5***

***Andy Couch = 1***

***Mike Wood elected as chair, 5-1.***

***--***

***Vice-Chair nomination***

***KZ – nominated Andy Couch; TH – nominated Howard Delo. No further nominations.***

***Candidate statements.***

***Roll call vote (voter: vice-chair vote):***

***MW: Andy Couch***

***HD: Howard Delo***

***AC: Andy Couch***

***LE: Andy Couch***

***TH: Andy Couch***

**KZ: Andy Couch**

--

**Vice-Chair Roll Call RESULTS:**

**Andy Couch = 5**

**Howard Delo = 1**

**Andy Couch elected as vice-chair, 5-1**

## 2. Moose Management Letter to ADFG

**KZ: presented a summary to the Chickaloon Council – everyone wanted cow/calf hunts ended; not sure how to move ahead with this.**

**HD to AC: what have the Advisory Committees done on this issue? AC: won't make it to the BOG in time for their meeting (Jan. 21); mgmt. decisions will be made in late February; Advisory Committees voted on related issues;**

**LE: we had discussed previously whether we wanted to submit to BOF or to ADFG, we chose the latter – we have time if needed.**

**MW: Tim Peltier said they won't get rid of hunt, just reduce to zero; this letter to ADFG commissioner gives info to ADFG.**

**Sykes: could have simple language added tonight.**

**KZ: could postpone and route language to more publics, could develop more robust language if delayed**

**Any actions?**

**LE moves we postpone action on this item until Feb. 17<sup>th</sup> FWC meeting; KZ seconded. .  
Motion passed unanimously.**

**MW moves PP, KZ, and AC work on this letter for Feb. 17 meeting; LE seconded.  
Motion passed unanimously.**

## 3. West Susitna Access Road

**No action.**

## 4. Kodiak Fisheries Working Group

**MW: John Wood previous reference was that FWC should reach out to Duncan Fields and indicate our interest in working on the related RC, and find money for this kind of research?**

**Bill Stoltze: I think Duncan Fields would like to repair some prior burned bridges.**

**LE: I think it would be appropriate that MW reach out to Duncan?**

**Any actions?**

**MW moved he reach out to Duncan Fields to discuss coordination between the Kodiak work group and the FWC on fisheries issues; LE second.**

**Motion passed unanimously.**

#### **IX. NEW BUSINESS**

##### **1. Alaska Recreation Rivers Board/Management Plan**

**MW reviewed the Board's December meeting.**

**Next meeting is January 27<sup>th</sup> (Ted sent email).**

**Stephanie Nowers: just one meeting so far; had details on the planning process;**

**LE: shared his historical perspective.**

**Bill Stoltze: Sam Cotton has an interest in this issue, and could be a future speaker on this issue.**

**MW: I am so impressed with the Rec Rivers Mgmt Plan, it's a quality document.**

**LE: spoke of the importance of the Rec Rivers law.**

**AC: there is prime game habitat along these rivers as well.**

**Any actions?**

##### **2. Susitna Basin Gas License Comment Extension**

**SEE BLUE 31 OF SUPPLEMENTAL HANDOUT.**

**Any discussion?**

**MW: they have extended comment period to Feb. 21**

**KZ: Feb. 21 is a holiday, so any letter/comment would have to be forwarded by Feb. 18.**

**J. Sykes: this kind of resource extraction requires large quantities of water, which could impact our fisheries in the area.**

**KZ: exploration work happened earlier on west side of CI, so there should be information out there on economics.**

**AC: If we were to write a letter we would want to include info not just on the east side.**

**Any actions?**

MW moved that a FWC committee of MW, KZ, J. Sykes be formed to write a position letter on this issue for consideration at the Feb. 17 FWC meeting; LE seconded.

Motion passed unanimously.

### 3. State Legislative Outreach Proposal

#### *Any discussion?*

**Bill Stoltze:** Recommends we invite a legislator to speak for 5 minutes each meeting, starting with Rep. Kevin McCabe.

**J. Sykes:** the FWC needs to be on the agenda at the LIO meeting.

#### *Any actions?*

AC moved that FWC invite one state legislator per FWC meeting to speak; MW seconded.

Motion passed unanimously.

#### X. MEMBER COMMENTS

HD: healthy; BOG takes up proposals Jan. 21, and he has one proposal into them; congrats to AC.  
AC: Thanks everyone for a good meeting; appreciates Stephanie Nowers for attending.

TH:

J. Sykes: ADFG staff and interest on getting more weirs and funding, CIAA could possible fund these so we should talk to them.

TE: Described his upcoming new role with the MSB.

MW: Thank you for electing me Chair; no moose or fish, but I will try to keep meetings to 2 hours or less; recent health issues are good. Pleased how the FWC has been engaged.

#### XI. NEXT MEETING DATE: February 17, 2022. Lower Level Conference Room

#### XII. ADJOURNMENT

- Motion to adjourn? LE
- Second? KZ

**THE MOTION PASSES UNANIMOUSLY - we stand adjourned at 6:46 PM.**

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Mike Wood, Chair

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Dated

ATTEST:

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Ted Eischeid, Planner II Staff

Dated

DRAFT







# MATANUSKA-SUSITNA BOROUGH

## Planning and Land Use Department

### Planning Division

350 East Dahlia Avenue • Palmer, AK 99645

Phone (907) 861-7833

<http://www.matsugov.us> • [planning@matsugov.us](mailto:planning@matsugov.us)

**Date:** 17 February 2022

**Re: FWC Staff Report**

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### 1. Alaska Recreation Rivers Advisory Board

<https://gov.alaska.gov/services/boards-and-commissions/fact-sheet/?board=123>

Last met on 27 January 2022.

- Agenda here: [Susitna Basin Recreation Rivers Advisory Board Meeting - Alaska Online Public Notices \(state.ak.us\)](#)

### 2. West Susitna Access Road Update.

#### Project Overview

- The Alaska Industrial Development and Export Authority (AIDEA) in coordination with the Matanuska-Susitna Borough (MSB) is working to determine the feasibility of a multi-use, public access road from the Point MacKenzie area to a state mining district containing oil and gas deposits, coal, gold, copper, silver, and platinum in the Alaska Range.

#### Major features:

- Build approximately 100 miles of new gravel road
- Build 156 known water crossings

*Providing Outstanding Borough Services to the Matanuska-Susitna Community*

***Ted Eischeid, Planner II***

*Supporting Environmental Planning and the MSB Fish & Wildlife Commission.*

[Ted.eischeid@matsugov.us](mailto:Ted.eischeid@matsugov.us) Ph. 907.861-8606, Cell 795-6281

- Borough project website: <https://west-susitna-access.matsugov.us>  
AIDEA project website: <https://www.aidea.org/Programs/Project-Development/West-Susitna-Access>

- **Two Public Meetings**
- The Matanuska-Susitna Borough invites you to find out more and provide comments.

1. Wednesday, February 23, 2022
2. Wednesday, March 23, 2022

Time for both meetings: 4 to 7 pm, Presentations at 4, 5, & 6 pm

Online Location: [https://bit.ly/susitna\\_access](https://bit.ly/susitna_access)

Phone Location: 253-215-8782, Meeting ID: 860 7777 0537, Passcode:  
150663

### **Submit a comment**

- Text Message Survey: Text "access" to 866-298-0013  
Online Survey: <https://forms.gle/bxjqzNgDUF3jNEeh8>  
Email: [comments.yehlealaska@gmail.com](mailto:comments.yehlealaska@gmail.com)  
Call: 907-346-0506

- **Status**

- Phase 3 (current): Permitting & engineering  
Phase 1 & 2 (completed): Pre-engineering

- **Funding**

- Phase 3 Estimate: \$8.5 Million  
Funding Source: State of Alaska

Final Design & Construction Estimate: \$300 Million to \$400 Million

Funding Source: To be determined

### **Schedule**

- Permitting & Engineering (AIDEA): 2022-2027

Proposed Construction: 2028

### **Contact Us**

- Camden Yehle, Yehle & Associates  
Public Involvement Lead, 907-346-0506,  
[comments.yehlealaska@gmail.com](mailto:comments.yehlealaska@gmail.com)

Brad Sworts, Matanuska-Susitna Borough  
Project Manager, 907-861-7715



**CORRESPONDENCE 1/2: BECKY LONG**Memorandum Regarding SUSITNA BASIN RECREATION RIVERS MANAGEMENT PLAN REVISION

To: Alaska Department of Natural Resources Division of Mining, Land and Water Planning Team,  
\_\_\_\_ Susitna Basin Recreation Rivers Advisory Board,  
\_\_\_\_ Mat Su Borough Fish and Wildlife Commission  
\_\_\_\_ Mat Su Borough Community Councils, and Members of the Public  
\_Re: The Perspective of a Residential Property Owner Adjacent to Recreation River Corridor  
February 1, 2022

Topic: A Robust and Thorough Plan Revision Process

The original Plan creation encompassed a very robust and thorough public, State, and Mat Su Borough participation. The resulting Plan was a collaboration between agencies, organizations, the legislature and the public. One could hope that this revision process will also be thoroughly transparent, robust and responsive to public and stakeholder participation.

1. The original 12 member Planning Team consisted of representatives of the Alaska Department of Natural Resources Divisions of Land, Parks and Outdoor Recreation, Forestry, Mining, Agriculture, Oil and Gas, Geological and Geophysical Surveys, the Alaska Departments of Fish and Game, Environmental Conservation and Transportation, the Mat Su Borough and the City of Houston.  
This revision process Planning Team seems to be only 3 members of the ADNR Division of Mining, Land and Water. Is this adequate?
2. The original 13 member Advisory Board was made up of 11 members of the public representing stakeholders plus a Mat Su Borough Designee and Planning Commission member.  
The current revision Advisory Board has 3 members of state agencies on it. State agency staff are more appropriate for the Planning Team membership and not the Board. This seems somewhat disingenuous and does not represent stakeholders thoroughly.  
The Board has the power to make recommendations. This means the Board is in a powerful position to shape the future.
3. In the plan creation, the National Park Service provided technical assistance and advisors through their Rivers and Trails Conservation Assistance Program. NPS provided the hydrological input to establish Instream Flow Reservations of the rivers, inventory assessment, and user patterns and trends.  
Could perhaps these resources be used again in this revision process?
4. There were 8 Community Advisors from the community councils of Skwentna, Trapper Creek, Willow, Fishhook, representatives from Talkeetna, Alexander Creek and the cities of Palmer and Wasilla.  
Will the revision be using community advisors in this process?

Topic: The Scoping Process

1. When the Plan was created, the situation was:
  - Over 100 commercial operations were active on these rivers: fishing guides, whitewater companies, boat and air taxis and lodges,
  - 430 private parcels in the corridors totaling 3,000 acres with 150 cabins,
  - 30 lodges in or adjacent to the corridors,
  - 30 docks,
  - 16 airstrips,

- 7 major bridges, and
- Numerous boat launches.

For good intelligent scoping comments, the public needs to know how much the above situation has changed.

2. The public needs to know how the Division implemented the Plan throughout the 31 years the plan was in effect. Chapter 4 Implementation laid out the various ways the plan was to be carried out or changed over the 20 year life of the Plan. Implementation is by executive actions through Amendments, Special Exceptions, and Minor Changes. A list of the executive actions for these 32 units should be provided to the public.

In chapter 4, Areas Recommended for Designation as Recreation Rivers are listed on page 4-1. What happened to these recommendations?

- Upper Nancy Lake Creek (480 acres) as part of Little Susitna River subunit.
- Middle Little Susitna River delete 350 acres,
- Upper Moose Creek (1,120 acres),
- Lower Alexander Creek (115 acres)
- Upper Talkeetna River (150 acres), extend to the upper end of the scenic Talkeetna Canyon.

3. What are the intentions of the Division regarding the Instream Flow Reservations that were mandated by the state legislation?

The Recreation Rivers Act AS 41.23.420(b) states to reserve to the state under AS 46.15.145 an instream flow or level for the water described in AS 41.23.500 that is adequate to achieve the purposes of AS 41.23.400.

The resulting reservations are Deshka River LAS 28727, Lake Creek LAS 27786, Moose Creek LAS 31744, and Talkeetna River LAS 13228. I do not know the LAS for the other Recreation River units.

Topic: The Susitna Basin Recreation Rivers Plan is an Important Tool to deal with the Cumulative Impacts from 3 Proposals of Mega-Projects in the West Susitna Watershed

The original impetus for the enabling legislation and the Plan was the over-use and conflicting uses of these 6 waterways. A 300% increase in fishing effort on these 6 rivers between 1977 and 1988 brought problems of litter, sanitation, crowding, long term camps in popular areas, and abandoned property to name a few. Page 1-7 of the Plan stated that “slowly, but surely, the character of these rivers are disappearing before our eyes.”

The Plan became a tool for ongoing stewardship of the resources allowing targeted management in the high use areas.

- Wildlife guidelines to reduce bear conflicts, protect bald eagles and trumpeter swan nesting sites and enhance habitat.
- Riparian guidelines to protect these areas from overuse and degradation.
- Shoreline development guide to ensure that the projects are sited, designed and constructed to minimize degradation of water quality and impacts on recreation, navigation and fish and wildlife habitats.
- Upland development guidelines for powerlines, pipelines, and airstrips to reduce potential safety hazards and impacts on fish and wildlife habitat, recreation, water quality and navigation.

The following 3 proposed projects will impact vast swaths of the west side of the Susitna River watershed including the 5 recreation river management units and corridors.

It is clear that the Susitna Basin Recreation Rivers Management Plan is needed now more than ever in the face of proposals that mean a lot of water and gravel extraction, construction roads and branches, and man camps to name a few actions that will occur. The newly created developed access infrastructure is one of the most significant aspects of these proposals.

1. West Susitna Mining Road- This 107.9 mile road is proposed to go from Port Mackenzie to the Estelle Mining District near Rainy Pass. Part of this road parallels the Iditarod Historic Route and the Donlin Gold natural gas pipeline proposed state Right of Way. There will be 24 bridges, 20 of which are conventional and two non-conventional, complex bridges of 1200 feet (Hayes River) and 1640 feet (Susitna River). There will be 156 stream crossings; 145 will need culverts with 90 culverts being designed for fish passage.

It appears the proposed road could impact the Talachulitna River Management subunit 5a; the Alexander Creek Management subunits 6a, 6b, 6c, 6d; and the Little Susitna Management subunit 1a.

## 2. Susitna Valley Gas Exploration Licenses

The Division of Oil and Gas has a public comment period open to March 14 on a Preliminary Best Interest Finding for two 10 year gas exploration licenses for coalbed methane (CBM) in the West Susitna River Watershed. License Area 1 has 434,835 acres and License Area 2 has 480,658 acres which is approximately 1400 square miles. This is 7% of the whole Susitna River basin which breaks down to 64% of the Lower Susitna River Sub-basin and 36% of the Yentna River Sub-basin. The areas encompass south of Willow, north to near Peters Creek, and west to beyond Skwentna.

Portions of the Deshka River subunits 2a-2g, Alexander Creek subunits 6b-6d, Lake Creek subunits 4a-4e and Talachulitna River Recreation River subunits 5c-5f (portions) are within License Areas 1 and 2.

## 3. Donlin Gold Natural Gas Pipeline and Optic Fiber state Right of Way

Currently the proposed ADL 231908 is the ROW for the natural gas pipeline. It is in court on appeal. This 150 foot wide access corridor would start in the Susitna Flats Game Refuge between the Lewis and Theodore Rivers and goes to the Donlin Gold mine in the Kuskokwim River watershed. There is no Right of Way application for the optic fiber corridor as of yet. But that is planned. It proposed to start at Aryshire Road in the Pt. Mackenzie area. In some parts of their access, the Iditarod Historical Trail, the Donlin pipeline ROW and the West Susitna mining road will run parallel.

It would appear that the Donlin ROW could impact parts of the Talachulitna Recreation River Management Unit.

In conclusion, our bountiful natural resources of the West Susitna area are not infinite anymore. They are not boundless. The whole area is at a cross roads of industrial infrastructure and extraction expansion that could cause major changes.

The Susitna Basin Recreation Rivers Management Plan is important to preserve and protect those renewable resources that are a significant part of the public value and the economies of this state.

Becky Long  
2/1/2022





## CORRESPONDENCE 2/2: BECKY LONG

Second Memorandum Susitna Valley CBM Exploration Leases

## Second Memorandum Regarding SUSITNA VALLEY GAS EXPLORATION LICENSE

## PRELIMINARY WRITTEN FINDING OF THE DIRECTOR dated December 10, 2021

Comment Deadline 5 pm, February 21, 2022

Comments emailed to [dog.bif@alaska.gov](mailto:dog.bif@alaska.gov)

The Alaska Natural Gas Corporation headed by Robert Fowler has applied for two ten year gas exploration licenses for coalbed methane (CBM). License Area 1 has 434,835 acres and License Area 2 has 480,658 acres. This cumulative total of almost a million acres is approximately 1400 square miles. The areas are 7% of the whole Susitna River basin which breaks down to 64% of the Lower Susitna River Sub-basin and 36% of the Yentna River Sub-basin. The license areas encompass south of Willow north to near Peters Creek and beyond Skwentna to the west.

The Director of Oil and Gas of the Alaska Department of Natural Resources has found in this Preliminary Best Interest Finding that these exploration licenses are in the best interest of the state. This finding is what the public is commenting on.

These exploration licenses would be a disposal of state land. The licenses are only for coalbed methane gas and can be converted to a lease or leases with no other written best interest finding required. The ten year license terms requires a "work commitment" of \$3 million for license area 1 and \$3.3 million for license area 2. "Work commitment" is defined as the amount that the applicant will spend on exploration, drilling, remote sensing, geological, geochemical and geophysical studies.

However, page 8-1 states that the director cannot predict whether the full commitment will be met in post disposal activities. This is disconcerting because without that work commitment being met, how does the public know that mitigation and permit requirements will actually happen and be met? ADNRR has a poor track record of vigorous implementation of contractual agreements that protect cultural and environmental resources, community interests and private property rights.

The first memorandum dated 1/16/22 focused on the Habitat and Resource values as written in chapters 4 and 5 in the Preliminary Finding. The following resources were not discussed.

- Wetlands and waters cover 69% of the license areas (License area 1-31%, 2-38%).
- There are 90 reported cultural resource sites within the areas according to the Alaska Heritage Resources Survey database. 80% of these sites are in the southern portion of license area 1. 26% of these are paleontological, 53% are prehistoric and 21% are historic. Only a small portion of the state has been surveyed for cultural resources and previously unidentified resources may be located within the license area.

Topic: Coalbed Methane Gas

Coalbed methane (CBM) is adsorbed to coal i.e. accumulates on the internal structure of coal. The extraction of CBM is by a production well drilled to intersect the coal seam. Fractures are created or existing ones enlarged by using hydraulic or other gas injection methods. CBM can then be drawn to wells and pumped out. For more exhaustive discussion, see chapter 6 and 8 of the preliminary finding.

Page 8-20 states that it may require 10 to 20 coalbed methane wells at densities of 40, 80, or 160 acres per well to produce the equivalent of two to three conventional gas wells. As a result extensive contiguous areas are generally required that may result in widespread surface development with roads, well pads, and pipelines.

Second Memorandum Susitna Valley CBM Exploration Leases

Page 8-11 quotes the National Research Council's 2010 study of CBM on surface and groundwater resources in the western states that are pertinent to these license areas. Cumulative environmental effects of pumping and disposal of CBM produced water depend on water quantity, potential water drawdown or discharge volume, and changes in water quality. ...Understanding potential environmental consequences relies on understanding the hydrology of the basin; connectivity between water in methane bearing coal deposits and surface water and groundwater systems; and the chemistry and age of coalbed waters.

CBM exploration requires seismic surveys, construction and use of support facilities such as roads, production and well pads, fuel tanks, and gathering and distribution pipelines. All this needs land clearing, gravel and road access. Potential cumulative effects could include physical changes and disturbances that could alter watershed, waterbodies, and wetlands, habitat availability and suitability, and behavior and abundance of fish (page 8-17).

CBM generates large quantities of produced water which may contain trace concentrations of toxic metals such as arsenic, lead and chromium and organic substances including phenols, biphenyls, heterocyclic compounds, and polycyclic aromatic hydrocarbons. In addition to production wells, service or injection wells are drilled to inject water or other gases into the reservoir to maximize recovery. The bulk of the waste materials are produced water and drilling muds and cuttings.

Topic: Impact Mitigation Measures

The preliminary finding does recognize the value and importance of fish and wildlife habitats and populations and recreation, tourism, hunting, fishing, subsistence resources. But DOG believes that mitigation and permitting regulations by state, federal and local agencies can prevent, avoid or minimize negative impacts. In December 2004 DOG promulgated regulations *Enforceable Standards for Development of State Owned Coalbed Methane Resources in the Matanuska-Susitna Borough*. The preliminary decision asserts that these will be the minimum level of protection standards that they will use.

A brief history of these Enforceable Standards is outlined in appendix D of the finding. This is relevant to these current CBM leases.

Appendix page 2 states "that the potential development of coalbed methane in the Mat-Su Borough has been the source of tremendous public debate since the summer of 2003 when ADNR announced the applications had been received for Shallow Natural Gas leases in the area."

Public concerns as to contamination of drinking water wells abounded. However, due to public outcry, in 2004, the legislature repealed the shallow natural gas leasing program and included a prohibition of coalbed methane development from an aquifer used for drinking water or agricultural purposes, and mandatory setbacks and noise restrictions on coal bed methane activities. A series of public workshops and public hearings and comments occurred early in 2004. This culminated in the signing by ADNR in December 2004 of the Enforceable Standards.

Topic: The West Susitna Area is a Target for Three Major Proposed Projects. Cumulative impacts from ALL Proposals Need to be Considered

Page 8-25 discusses the Landscape Condition (their term) for the license areas. This is a measure of habitat modification from transportation infrastructure, urban and individual development and the

## Second Memorandum Susitna Valley CBM Exploration Leases

spread of invasive species. See figure 8.7 on page 8-27. The landscape condition for the license areas is primarily undeveloped and is rated very high. *This shows what is at stake when large scale industrial activity is proposed.*

The West Susitna River watershed area is being considered by 3 major proposals: Susitna Valley Gas Exploration Leases, the West Susitna Mining Access Road, and the Donlin Gold natural gas pipeline and their optic fiber line. The Iditarod, the West Susitna proposed road, and the Donlin Right of Way all cross the license areas.

Along with that, the Division of Mining, Land and Water of the Alaska Department of Natural Resources has started a public process to “revise” the Susitna Basin Recreation Rivers Management Plan. Portions of the Susitna Basin Recreation Rivers and their corridors are in both license areas: Deshka River, Alexander Creek, Talachulitna River, and Lake Creek management units.

The cumulative impacts from all these proposed projects and actions are not being considered in this preliminary finding. This is truly egregious to leave out such cumulative impact consideration.

Page 5-20 talks about Transportation access for the license areas. Oil well Road extends into License area 2 from the North and Deshka Landing Road extends further west into license area 1. The finding states that the nature of the trails in the area would likely need to be widened to allow for passage of equipment. Oil Well Road is also being discussed as a winter access route for Donlin pipeline construction. But the impacts of this road use along with the current road use are not discussed. All these major industrial proposals need construction roads, gravel resources, water extraction, and anadromous waterway crossings just to name a few.

Our bountiful natural resources of the West Susitna area are not infinite anymore. They are not boundless. The whole area is at a cross roads of industrial expansion which will cause major changes.

Becky Long

1/24/2022



**MOOSE MGMT. COMMITTEE LETTER - TRACKED CHANGES**

Doug Vincent-Lang  
Commissioner  
Alaska Department of Fish and Game

Dear Commissioner Vincent-Lang

I would like to extend our appreciation for your staff taking the time on December 16, 2021 to meet with the Matanuska-Susitna Borough (MSB) Fish and Wildlife Commission (FWC). Your staff, consisting of Gino Del Frate, ~~and~~ Tim Peltier and Todd Rinaldi provided us an in-depth review of the status and management of moose populations within the Mat-Su Borough. Before I get into the main theme of this letter, I would like to provide you with a brief summary of this Commission.

The MSB Fish and Wildlife Commission, formerly the Mayor's Blue Ribbon Sportsmen's Committee, was formed in February 2007 to represent the interests of the Borough in the conservation and allocation of fish, wildlife and habitat.

The commission advises the MSB Assembly and the State of Alaska Boards of Fish and Game regarding fish and wildlife practices and policies that affect the Matanuska-Susitna Borough.

The commission consists of eight representatives, to include Chair Mike Wood, Vice Chair Howard Delo, Assembly members Tim Hale and Jesse Sumner, Larry Engel, Kendra Zamzow, Peter Probasco, Andy Couch and ex-officio member Jim Sykes. Staff support is provided by MSB employee, Ted Eischeid.

The presentation Area Biologist Tim Peltier provided was well organized and easily understood. Upon completion of his presentation, a question-and-answer dialogue proceeded and if it wasn't for the time constraints of the meeting, would have lasted much longer. Commission members learned the Department's most recent moose population estimates listed subunit 14B (November 2021) below population objective range, subunit 14A (December 2020) above population objective, subunit 16A (December 2020) within population objective, and subunit 16B (February 2018 south / February 2019 north / November 2020 - middle) as above population objective -- but with concerns about how the past two deep snow winters may have changed population status. ~~As a whole, we learned that the Department believes that the management units within Game Management Units 14 A&B and 16 A&B are either within or above the population objective.~~ Concerns and questions were raised focusing on survey techniques and frequency, declining numbers from the twinning surveys, as well as the concern of overharvesting the female population.

The FWC believes the current female harvest is too liberal and that local depletion within these two management units has occurred. We also learned, that the best method to approach this concern is not to pursue the closure of these antlerless hunts but to work with ADF&G who has the management authority within a given year to either reduce permits numbers or elect not to hold that hunt.

Antlerless moose hunts during November and December create the most concern for commission members, and we recommend when a moose population is within or below management

objective in subunit 16A, 16B, 14A, or 14B -- or trending downward in a manner that could drop a population below a subunit objective -- please consider achieving each subunit's minimum population threshold as a top Department priority. We recommend reducing antlerless moose permits, whenever necessary, to achieve each of these Mat-Su Valley population objective thresholds, with the understanding that some years no permits may be issued for one or more specific hunts in order to achieve population objective(s). We hope you agree that maximum benefit from our valuable Mat-Su Valley moose resource is best achieved when moose populations are maintained above minimum objectives in all Mat-Su Valley game management subunits.

Specifically, the antlerless moose hunts occurring in November and December are our biggest concern and we would recommend that whenever the moose population is at or below the management objective that the number of permits be reduced or if necessary, not hold the hunt for that year. In addition, the FWC encourages ADF&G to address concerns raised by residents of Unit 14A and make it illegal to harvest a cow moose that is accompanied by the current year's calf. This would seem to follow ADF&G's concerns that an orphaned calf generally has a reduced chance of survival in the presence of predators and deep snow winters and as expressed in the letter sent by the Palmer ADF&G office to antlerless moose permit holders: "We encourage you to select a cow moose that is not accompanied by the current year's calf. An orphaned calf generally has a reduced chance of survival...". This would also mirror regulations which describe "Legal Moose", e.g., Units 7, 13A, 15C and 20A for example.

We look forward to continuing working with your staff and appreciated their stated willingness to do so. Your response would be greatly appreciated.

Best Regards,

Mike Wood, Chair  
Matanuska-Susitna Borough  
Fish and Wildlife Commission

Cc: Director Edward Grasser, Regional Supervisor Gino Del Frate, Area Management Biologist Tim Peltier

Formal Motion Adopted by the FWC on 12/16/2021

That the FWC communicate to the Commissioner of Fish and Game, and Director of Wildlife Conservation, requesting the Department reduce antlerless moose permits for the months of November and December, whenever a moose population in Unit 14A or the following adjoining Game Management Unit(s) (13A, 14B, 14C, 16A, 16B) is below moose population objective levels.

## MOOSE MGMT COMMITTEE LETTER - CLEAN COPY

Doug Vincent-Lang  
Commissioner  
Alaska Department of Fish and Game

Dear Commissioner Vincent-Lang

I would like to extend our appreciation for your staff taking the time on December 16, 2021 to meet with the Matanuska-Susitna Borough (MSB) Fish and Wildlife Commission (FWC). Your staff, consisting of Gino Del Frate, Tim Peltier and Todd Rinaldi provided us an in-depth review of the status and management of moose populations within the Mat-Su Borough. Before I get into the main theme of this letter, I would like to provide you with a brief summary of this Commission.

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The presentation Area Biologist Tim Peltier provided was well organized and easily understood. Upon completion of his presentation, a question-and-answer dialogue proceeded and if it wasn't for the time constraints of the meeting, would have lasted much longer. **Commission members learned the Department's most recent moose population estimates listed subunit 14B (November 2021) below population objective range, subunit 14A (December 2020) above population objective, subunit 16A (December 2020) within population objective, and subunit 16B (February 2018 south / February 2019 north / November 2020 - middle) as above population objective -- but with concerns about how the past two deep snow winters may have changed population status.** Concerns and questions were raised focusing on survey techniques and frequency, declining numbers from the twinning surveys, as well as the concern of overharvesting the female population.

The FWC believes the current female harvest is too liberal and that local depletion within these two management units has occurred. We also learned, that the best method to approach this concern is not to pursue the closure of these antlerless hunts but to work with ADF&G who has the management authority within a given year to either reduce permits numbers or elect not to hold that hunt.

Antlerless moose hunts during November and December create the most concern for commission members, and we recommend when a moose population is within or below management objective in subunit 16A, 16B, 14A, or 14B -- or trending downward in a manner that could drop a population below a subunit objective -- please consider achieving each subunit's minimum population threshold as a top Department priority. We recommend reducing antlerless moose

permits, whenever necessary, to achieve each of these Mat-Su Valley population objective thresholds, with the understanding that some years no permits may be issued for one or more specific hunts in order to achieve population objective(s). We hope you agree that maximum benefit from our valuable Mat-Su Valley moose resource is best achieved when moose populations are maintained above minimum objectives in all Mat-Su Valley game management subunits.

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We look forward to continuing working with your staff and appreciated their stated willingness to do so. Your response would be greatly appreciated.

Best Regards,

Mike Wood, Chair  
Matanuska-Susitna Borough  
Fish and Wildlife Commission

Cc: Director Edward Grasser, Regional Supervisor Gino Del Frate, Area Management Biologist Tim Peltier

Formal Motion Adopted by the FWC on 12/16/2021

That the FWC communicate to the Commissioner of Fish and Game, and Director of Wildlife Conservation, requesting the Department reduce antlerless moose permits for the months of November and December, whenever a moose population in Unit 14A or the following adjoining Game Management Unit(s) (13A, 14B, 14C, 16A, 16B) is below moose population objective levels.



## MOOSE MGMT LETTER EMAIL FROM A.C.

**From:** [Andy Couch](#)  
**To:** [Theodore Eischeid](#); [Kendra Zamzow](#); [Pete and Eileen Probasco](#)  
**Subject:** Fwd: FW: permit  
**Date:** Wednesday, February 2, 2022 3:41:11 PM  
**Attachments:** [2021\\_DM407\\_Permit.pdf](#)

---

**[EXTERNAL EMAIL - CAUTION: Do not open unexpected attachments or links.]**

If you can open the attachment from Tim Petier's forwarded email and include it in the Fish & Wildlife Commission packet -- it will show Commission members what ADF&G currently communicates to antlerless moose drawing permit hunters concerning harvesting cow -- calf -- and antlerless bull moose with their Subunit 14A permit.

In addition, I talked with a trooper from Glenallen concerning what would occur if a hunter killed a cow moose that was accompanied by a calf in an area where it was illegal to harvest a cow accompanied by a calf. The trooper said the hunter would be cited -- however -- if the hunter was a self-turn-in, a trooper MIGHT be more lenient than if the violation was reported by someone else or found by a trooper in the field. Another issue we discussed is that it can be difficult in the field, for someone to know if a particular nearby calf moose, was offspring of a dead cow that a hunter harvested. Sometimes a calf may hang around a kill site for a while --or it could run off immediately. Either way, how does one prove, with some degree of certainty, if a particular calf moose belonged to a the cow moose that has been harvested?

The trooper I talked with is stationed in Unit 13, where it is illegal to harvest a cow moose accompanied by a calf -- however -- he had never made a citation for this particular type of violation.

Andy Couch  
Fishtale River Guides  
(907) 746-2199  
[fishing@fish4salmon.com](mailto:fishing@fish4salmon.com)

----- Forwarded message -----

From: **Andy Couch** <[fishing@fish4salmon.com](mailto:fishing@fish4salmon.com)>  
Date: Mon, Jan 31, 2022 at 5:30 PM  
Subject: Fwd: FW: permit  
To: Kendra Zamzow <[klzamzow@chickaloon-nsn.gov](mailto:klzamzow@chickaloon-nsn.gov)>

Andy Couch  
Fishtale River Guides  
(907) 746-2199  
[fishing@fish4salmon.com](mailto:fishing@fish4salmon.com)

----- Forwarded message -----

From: **Peltier, Tim C (DFG)** <[tim.peltier@alaska.gov](mailto:tim.peltier@alaska.gov)>  
Date: Mon, Jan 31, 2022 at 3:57 PM

Subject: FW: permit

To: [fishing@fish4salmon.com](mailto:fishing@fish4salmon.com) <[fishing@fish4salmon.com](mailto:fishing@fish4salmon.com)>

Hey Andy,

Here's an example of the letter that accompanies the antlerless hunts in the valley. I use the same letter for all the hunts.

Tim

---

**From:** Honig, Leigh S (DFG) <[leigh.honig@alaska.gov](mailto:leigh.honig@alaska.gov)>

**Sent:** Monday, January 31, 2022 3:51 PM

**To:** Peltier, Tim C (DFG) <[tim.peltier@alaska.gov](mailto:tim.peltier@alaska.gov)>

**Subject:** permit

*Leigh Honig*

Alaska Dept. of Fish & Game

Division of Wildlife Conservation

1801 S Margaret Dr, Ste 4

Palmer, AK 99645

907-861-2106



customer\_full\_name MOOSE PERMIT INFO

Congratulations on drawing this DM407 antlerless moose permit! Antlerless permits are issued to reduce population growth by stabilizing cow moose numbers to keep the population compatible with the available habitat and winter food supply. Please read these permit conditions carefully.

LEGAL MOOSE: Any antlerless moose includes cows, calves, or bulls (if they have shed both antlers naturally before they are shot). However, if you have killed a moose anywhere in Alaska since July 1, your permit is NOT VALID. We encourage you to select a cow moose that is not accompanied by the current year's calf. An orphaned calf generally has a reduced chance of survival in the presence of predators and deep snow winters. If you have questions about identifying a calf please contact our office at 746-6300. The department currently has collared moose in the hunt area. It is legal to harvest these animals, however data provided by them is important and the department asks hunters to avoid taking these collared animals. If you do take a moose that has a collar, you must notify the department when and where you took it, and you must return the collar to a Fish & Game office.

HUNT DATES: August 25 - September 25

HUNT AREA: See description in Additional Requirements and Information. A map of this hunt area is available online at: www.adfg.alaska.gov and at Fish and Game offices. It is your responsibility to know the permit boundaries and land ownership status. Much of the area, especially along roadways, is in private ownership. If there is a question about ownership, contact the Matanuska-Susitna Borough or DNR Division of Lands. YOU MUST GET PERMISSION PRIOR TO HUNTING ON PRIVATE LAND!

BEFORE THE HUNT: Read through your hunting regulations again to remind yourself of its contents, such as salvage and hunter education requirements, and sign the back of your harvest ticket. THE PERMIT IS NOT VALID UNLESS YOU SIGN IT and must be carried with you while in the field hunting.

IF YOU ARE SUCCESSFUL: Validate your harvest ticket immediately after taking a moose (before you gut or move your moose) by punching out the month and day. Complete the PERMIT REPORT and bring it along with the required 5 inch section of the lower jaw with front teeth to the Palmer or Anchorage Fish and Game office during regular business hours within 10 days of the kill.

IF YOU ARE UNSUCCESSFUL OR DID NOT HUNT: Submit the hunt report online, by mail or in person to a Fish and Game office within 15 days of the close of the season.

Regardless of the outcome of your hunt, you must return the permit report. If you fail to report, you will be ineligible for any drawing, Tier II, targeted or registration (including Tier I Nelchina caribou) permits next season and you may be cited.

Please report game violations and vandalism of private property by calling the MATCOM Dispatch Center at 352-5401 or Alaska Fish and Wildlife Safeguard at 1-800-478-3377.

Best of Luck!

Sincerely,  
Tim Peltier  
Palmer Area Biologist

Additional Requirements and Information

You must comply with all permit hunt conditions, additional requirements, and restrictions, as well as what is published in the permit hunt supplements, and Alaska hunting regulations for this regulatory year.

HUNT AREA: that northeastern portion of Subunit 14A bounded by a line beginning at the intersection of Wasilla Fishhook Road and the Parks Highway; then along Wasilla Fishhook road to Palmer Fishhook road, then North to the first bridge crossing the Little Susitna River, then along the Little Susitna River to Mint Glacier, then along Mint Glacier to the Unit 14A boundary, then along the Unit 14A boundary to the headwaters of the Chickaloon River, downstream along the Chickaloon River to its confluence with the Matanuska River, then along the North bank of the Matanuska River to the Old Glenn Highway, West on the Old Glenn Highway to the Glenn Highway, south on the Glenn Highway to the Parks Highway, and west on the Parks Highway to the point of origin.

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You must keep this permit in your possession while hunting and until you deliver your animal to the place of processing.

Hunt: **DM407**

Reg Year: 2021-2022

Permit: 1234567-888

Permit Holder: customer\_full\_name

Legal Animal:

Antlerless;

calf moose are legal in this hunt

Specimens Required:

Lower front teeth 5-inch section.

Reporting Requirements

Successful Hunters:

Report in person to Anchorage or Palmer within 10 days of kill.

Unsuccessful or Did Not Hunt:

Report within 15 days of season end.

JUL

AUG

SEP

OCT

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DEC

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issue text

STATE OF ALASKA Department of Fish and Game

Moose Drawing Permit - REPORT

\*2022DM4071234567\*

14A, Matanuska River, north

PLEASE PRINT CLEARLY AND USE ALL CAPS

DID YOU HUNT?

# OF DAYS HUNTED

GMU HUNTED

\*2022DM4071234567\* Hunt: **DM407**

Reg Year: 2021-2022

Permit: 1234567-888

NEAR WHAT SPECIFIC LOCATION DID YOU HUNT? (IF SUCCESSFUL, PUT LOCATION OF KILL)

LATITUDE (EX: 64.7390 N): LONGITUDE (EX: 147.7163 W):

HOW DID YOU GET TO WHERE YOU STARTED WALKING?

CHECK COMMERCIAL SERVICES USED (CHECK ALL THAT APPLY):

DID YOU KILL A(N) Moose ?

DATE OF KILL (MM-DD-YYYY)

SEX OF ANIMAL

HOW DID YOU KILL IT? (SELECT ONE)

BIG GAME METAL LOCKING-TAG (IF APPLICABLE)

ANTLER CONFIGURATION

customer\_full\_name

Permit Holder's Printed Name

Permit Holder's Signature

Successful Reporting Requirements:

Unsuccessful/Did Not Hunt Reporting Requirements:

Report in person to Anchorage or Palmer within 10 days of kill.

Report within 15 days of season end.

FAILURE TO REPORT OR MAKING A FALSE STATEMENT ON A REPORT IS A MISDEMEANOR (SAAC 92)

PLEASE TEAR ALONG PERFORATED EDGES BELOW BEFORE MAILING.

mail\_to\_full\_name  
mail\_to\_address  
mail\_to\_city\_state\_zip  
mail\_to\_country  
bulk\_print\_bulk\_print

Forwarding Service Requested

PRESORT  
FIRST CLASS  
U.S. Postage  
**PAID**  
Permit #456  
Anchorage, AK

ANCHORAGE, AK 99518-1599  
333 RASPBERRY RD  
WILDLIFE CONSERVATION - INFORMATION SERVICES  
ALASKA DEPARTMENT OF FISH AND GAME

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Place  
Stamp  
Here

STATE OF ALASKA  
Department of Fish and Game

reissue\_text

Alaska Department of Fish & Game  
Div. of Wildlife Conservation  
1801 S Margaret Dr Ste 2  
Palmer AK 99645-6736

ADDITIONAL CONDITIONS OF THIS PERMIT

- 1. This permit is valid for taking the Legal Animal specified on this permit. It is only valid if you have not met or exceeded the bag limit for the species that is specified on this permit anywhere in Alaska during this regulatory year.
- 2. IMMEDIATELY upon taking your animal, validate this permit by completely removing the day and month of kill.
- 3. You must comply with all permit hunt conditions, additional requirements, and restrictions, as well as what is published in the permit hunt supplements, and Alaska hunting regulations for this regulatory year.
- 4. If you fail to report, you will not be eligible to receive any permits (Draw, Targeted, Tier II, or Registration, including Tier I Nelchina caribou) during the next regulatory year, and you may receive a citation.

I agree to comply with the permit hunt conditions for this hunt and understand that a violation of these permit conditions is a misdemeanor. I certify that I am eligible to receive this permit because I reported on all permits I was issued last regulatory year as required under SAAC 85 and 5AAC 92. Making a false statement on a permit application or report is a misdemeanor and is punishable under AS 11.56.210, AS 16.05.420 and 5AAC 92.020.

X  
Permit Holder must sign for permit to be valid

**SUSITNA BASIN GAS EXPLORATION LICENSE COMMITTEE COMMENT LETTER**

February 16, 2022

Fish and Wildlife Commission,  
Matanuska Susitna Borough  
350 Dahlia  
Palmer, AK 99645

Alaska Department of Natural Resources,  
Division of Oil and Gas, Best Interest Findings  
500 W. 7th Ave., Suite 1100  
Anchorage, AK 99501

RE: Gas Lease Exploration License Applications ADL file numbers 393572 and 393888

To the Director of the Alaska Division of Oil and Gas:

The Matanuska Susitna Borough Fish and Wildlife Commission (“Commission”), through this letter, comments on two exploration license applications comprising more than 900,000 acres in the Susitna Basin. The Commission is making recommendations and providing useful information to help the Alaska Division of Oil and Gas (“DOG”) ensure that the health of lands, wetlands, streams and rivers continues as part of the ongoing restoration of fish populations in the Susitna Basin. The Commission is not taking a position for or against the proposed exploration permits.

### **Commission Background**

*The commission shall advise and make recommendations to the assembly, borough manager, and/or any state or federal agencies, departments, commissions, or boards possessing jurisdiction in the area of fish, wildlife, and habitat on the interests of the borough in the conservation and allocation of fish, wildlife, and habitat.* [Matanuska Susitna Borough Code 4.75.010A]

The Commission is focused on science, best practices, new information related to habitat, and strategies to restore in-river fisheries productivity following four decades of decline. It has supported and helped fund studies by Alaska Department of Fish and Game (“ADFG”) to generate reliable public information. In addition, the Matanuska-Susitna Borough (“MSB”), whom the Commission advises, is one of four establishing partners for the Mat-Su Salmon Habitat Partnership that now includes more than 66 organizations.

Since 2013 the State Board of Fish has taken steps to support rebuilding Mat-Su salmon populations that are bearing success. Using the best available information and studies, this Commission advocated for and supported State Board of Fish policies now helping to restore salmon populations.

The current trend toward in-river fisheries restoration success relies on healthy wetlands, waters, streams and rivers in which salmon and other fish are reared. Coalbed methane (“CBM”) drilling and other developments need to be conducted carefully and planned thoughtfully to enable the current restoration efforts to succeed.

### **Overall Concerns**

The proposed gas exploration lease areas are within significant areas of wetlands, streams, and rivers that are critical to both fish and wildlife. This includes areas legislatively designated for protection of recreation and habitat, including Alexander Creek, Lake Creek, and the Deshka River (and by extension, Kroto and Moose Creeks) which are State-designated Recreational Rivers and parts of the Nancy Lake Recreation Area.

Hunting, sport fishing, subsistence, commercial and personal use fisheries are all critical to regional sustainability through food security, tourism, and important related economic activities that are historically and currently important.

License Area 1 borders the community of Willow, and overlaps land use area within the Willow Area Community Organization (“WACO”). WACO requested in 2017, when a similar license was proposed, and again in 2022 to have the area within the WACO boundaries excluded from the lease area due to the expected negative impact on habitat, and in turn businesses, property values, tourism, and recreation.

The Commission supports excluding the areas around Recreational Rivers, Recreational Areas, and the WACO boundary from the leases. These overall concerns are based on specific comments discussed in this letter.

### **Best available information**

Until 2016 there was no high-quality map of the waters and hydrography across the MSB. In the fall of 2013, The Nature Conservancy initiated a program in the Mat-Su Basin using newly available LiDAR data from the MSB to map all lakes, rivers, and streams to a level of quality and technical specification suitable for the public USGS National Hydrography Dataset (“NHD”). This mapping program meets federal standards and is freely available for use by government agencies and private and public organizations to support decisions which affect Mat-Su freshwater resources. The NHD needs to be the reference for hydrography information in areas considered for exploratory and production drilling.

While streams have now been well-mapped, many have not been surveyed for fish. If surveys are not done, many anadromous streams may be impacted due to more limited regulations on erosion control, water quality monitoring, and other protections. (Preliminary Written Findings, Chapter 8, p 8-24). Streams documented to have anadromous fish are included in the Anadromous Waters Catalog (“AWC”).<sup>1</sup> AWC streams gain protection, for example the requirement for fish passage culverts.

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<sup>1</sup> <https://www.adfg.alaska.gov/sf/SARR/AWC/> The “Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes” and the “Atlas of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes” are collectively referred to as the Anadromous Waters Catalog.

All streams, including ephemeral and intermittent streams connected to larger streams, should be surveyed for resident and anadromous fish prior to disturbance. One report suggests that, based on habitat and topography, there could be many more streams in the Mat-Su that should be surveyed.<sup>2</sup> Where surveys have been conducted near proposed development in other locations, new streams have been added to the AWC.<sup>3</sup>

Given the importance of waterways to livelihoods and economics of borough residents, projects like the proposed West Susitna gas leasing offer an opportunity for potential developers who are on the ground to cooperatively help fund ADFG to conduct these important surveys, guided by the 2016 update of USGS NHD map as a mutual benefit to the State and the MSB and the licensee.

### **Interagency cooperation**

The update of Mat-Su waters to the NHD was conducted under technical guidance from the Alaska Hydrography Technical Working Group, which includes representatives from ADFG, Alaska Department of Environmental Conservation (“ADEC”), Alaska Department of Natural Resources, U.S. Fish and Wildlife Service, U.S. Geological Survey, Bureau of Land Management, National Oceanic and Atmospheric Administration, National Park Service, U.S. Forest Service, and the University of Alaska. This shows how state, federal and local agencies can work together.

The commission recommends thorough cooperation and information gathering among the various agencies that may have jurisdiction within the Mat-Su Borough, including, but not limited to the U.S. Army Corps of Engineers and ADFG habitat biologists to understand the habitat, species use, and potential impacts.

### **Cumulative Effects**

It’s good to see that cumulative effects are considered. Currently all the bridges, stream crossings, culverts and fish passage culverts are envisioned for exploration. When production begins and methane is withdrawn from one coal seam area, the only way to get more is to open another area. The result will likely be a proliferation of well pads, distribution lines fuel tanks and service roads like large spider web across the country. The specific impacts described below (e.g. for well pad density) will have cumulative effects.

#### Well pad density

Well densities deserve serious consideration. The density of well pads and density of access roads and spur roads to gravel sites can fragment wildlife habitat and expose a greater number of streams to potential degradation (through erosion, turbidity from fugitive dust, and other impacts as noted in the

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<sup>2</sup> Woll, Christine. 2016. Landscape-scale mapping of Pacific salmon and their freshwater habitats in the Mat-Su Basin. Available: [http://matsusalmon.org/wp-content/uploads/2018/08/Landscape\\_scale\\_mapping\\_of\\_Pacific\\_Salmon\\_and\\_their\\_freshwater\\_habitats\\_in\\_the\\_Mat\\_Su\\_Basin.pdf](http://matsusalmon.org/wp-content/uploads/2018/08/Landscape_scale_mapping_of_Pacific_Salmon_and_their_freshwater_habitats_in_the_Mat_Su_Basin.pdf)

<sup>3</sup> See for example Woody, CA and O’Neal, S. 2010. Fish surveys in headwater streams of the Nushagak and Kvichak river drainages, Bristol Bay, Alaska 2008-2010. Available: [https://www.nature.org/content/dam/tnc/nature/en/documents/awc\\_dec\\_2010.pdf](https://www.nature.org/content/dam/tnc/nature/en/documents/awc_dec_2010.pdf) and U.S. Fish & Wildlife Service. 2010. Inventory of fish distribution in the Matanuska-Susitna Basin, Southcentral Alaska, 2010. Available: [http://matsusalmon.org/dev/wp-content/uploads/2012/10/02\\_2010\\_F10AC00710\\_CVTC\\_AWC.pdf](http://matsusalmon.org/dev/wp-content/uploads/2012/10/02_2010_F10AC00710_CVTC_AWC.pdf)



Preliminary Written Findings). The density of well pads is regulated, but regulations appear to only apply to conventional oil and gas drilling. In 20 AAC 25.055, is the following language:

- (a)(3) if oil has been discovered, the drilling unit **for the pool** is a governmental quarter section [160 acres]; not more than one well may be drilled to and completed **in that pool**...*  
*(a) (4) if gas has been discovered, **the drilling unit for the pool** is a governmental section; not more than one well may be drilled to and completed **in that pool** on any governmental section [640 acres]; a well may not be drilled or completed closer than 3,000 feet to any well drilling to or capable of producing **from the same pool**.*

Language limits **drilling for oil** to one pad per 160 acres; it limits **drilling for gas** to one pad per 640 acres; however it refers to “pools” of gas. Conventional gas wells tap pools of gas floating on water beneath the surface. Coalbed methane has no “pools” of gas; the gas is sorbed onto coal seams. Indeed, the Preliminary Written Findings notes in Chapter 8 (Section D1(b), page 8-20) that:

*The greatest potential for cumulative effects from gas activities on fish habitats and fish would occur during development and production. It may require 10 to 20 coalbed methane wells at densities of 40, 80, or 160 acres/well to produce the equivalent of two to three conventional gas well; as a result extensive contiguous areas are generally required that may result in widespread surface development with roads, well pads and pipelines (Griffiths and Severson-Baker 2006; Entrekin et al. 2011). By comparison well densities are 160 to 320 acres/well for the conventional Kenai Gas Field (Flores et al. 2004)*

The permit must be specific on the allowed density of well pads, and regulations for CBM exploration drilling pads should mirror those of conventional gas regulations.

#### Roads and seismic lines

Seismic survey lines, roads, and other opened areas can become routes for predators, potentially reducing moose populations. These are also routes that the public may use to access new hunting areas – increasing pressure on areas used by a small population of local people and visitors to hunting lodges. This is likely an unavoidable impact. Spills and leaks from vehicles and equipment is another unavoidable impact – spill extent can be reduced, but not eliminated.

Fugitive dust from exploration and spur roads can negatively impact wetlands and streams, and could accumulate on snow in depressions causing early melt in localized areas with potential impacts to underlying vegetation. Fugitive dust may contain copper that can shed from brake pads. Low concentrations of copper can be detrimental to aquatic life, including salmon, in waters that contain low organic carbon. Water can be used to suppress dust, but is unlikely to be effective in winter, and high winter winds could distribute dust for some distance. The permit should specify that only water should be used to suppress dust; where this is ineffective, non-toxic materials should be used. Salt should be discouraged due to potential impacts from runoff on streams and vegetation. Drainage ditches should be designed to capture and hold runoff to ensure it does not enter waterways.

Riparian areas need to be left intact in order to stabilize banks and provides shade for aquatic life, which may be critical during hot summers. The permit application rightly prohibits facilities from being within ¼ mile of several specific streams and rivers – a well-accepted way to protect fish and wildlife.



### Produced water

Produced waters that contain toxic metals needs to be disposed of carefully. The Preliminary Written Findings acknowledges that the large volumes of water that result from CBM drilling can be disposed of on the surface or through underground injection. According to the Preliminary Written Findings:

*One coalbed methane well in the Houston, Alaska area ... produced an average of 18,870 gallons/day with disposal of a total of 2.6 million gallons ... at about 2,000 feet below surface...*

All produced water should be required to be injected far below any aquifer. Produced water should be prohibited from being kept in holding ponds, sumps, or discharged to the surface. Regulations prohibit discharge within 500 feet of a stream, unless approved by ADEC, but the better option is not to allow any surface discharge.

### Water levels

Water quality and stream levels will fluctuate with CBM drilling. Lowering the water table during dewatering of coal seams may dry up wetlands and reduce flow in streams. This could be detrimental to fish in summer – by removing flow that helps keep water temperatures down and creates pools – and in winter – if flow is reduced enough to expose fish eggs. If wetlands are dried up, this should be considered “fill” of a wetland, and require compensatory mitigation. The baseline level of the water table should be determined at all sites to track how the water table drops during drilling and how that may affect fish and wildlife. Baseline water level measurements are currently only required near residential areas or if it is determined that water withdrawal will affect use by others. “Aquatic life” is a recognized “use” of water by ADEC, and that use should not be impacted.

### **Mitigation measures**

Coalbed methane exploration and drilling rules need to be followed as set by DNR and by Conditional Use Permit processes in MSB code 17.62. The 2012 MSB Wetlands Management Plan should be referenced, <https://matsugov.us/plans/wetlands-management-plan> . Millions have been spent to restore habitat for fish in the Mat-Su Borough through culvert replacement, and invasive species eradication. The 2004 regulations require setbacks from water bodies and other mitigation measures to reduce impacts on fish and wildlife.

### **Lessee Experience and Stability**

In advance of exploration the public should know that the potential lessee’s experience in Alaska, the financial stability of the company and the ability to initiate adequate precautions to keep our waters clean to enable the continued recovery of salmon and other species. Since most of the lease areas are remote and without road access, how can the State of Alaska adequately monitor and evaluate and guarantee the exploratory drilling performance by the lessee to ensure our fish and wildlife continue healthy trends?

### **Clarifying questions**

1. Will regulations on well pad density for CBM mirror those of conventional oil and gas facilities; e.g. one well pad per 640 acres?
2. *How many CBM wells has DNR permitted? How long were they in operation? What was the procedure for disposing of wastewater at each of them?*
3. The permit application notes that the “director may grant exceptions to the mitigation measures if they are not practicable”. Could “not practicable” be interpreted as a measure that will have a cost attached?

## Conclusion

The Mat-Su Borough Fish and Wildlife Commission supports optimal conditions for restoring our in-river fish runs to serve the long-term future of residents and visitors with sustainable fish and wildlife for food, subsistence, personal use, and sport fishing; it is also one of the few options left to produce more fish for the Cook Inlet commercial fisheries. Restoring Susitna basin runs means supporting the wetlands and streams that sustain them. Careful, thoughtful and well-planned development is essential.

---

Mike Wood, Chair

---

Dated

# ALASKA Journal of Commerce <sup>(/)</sup>

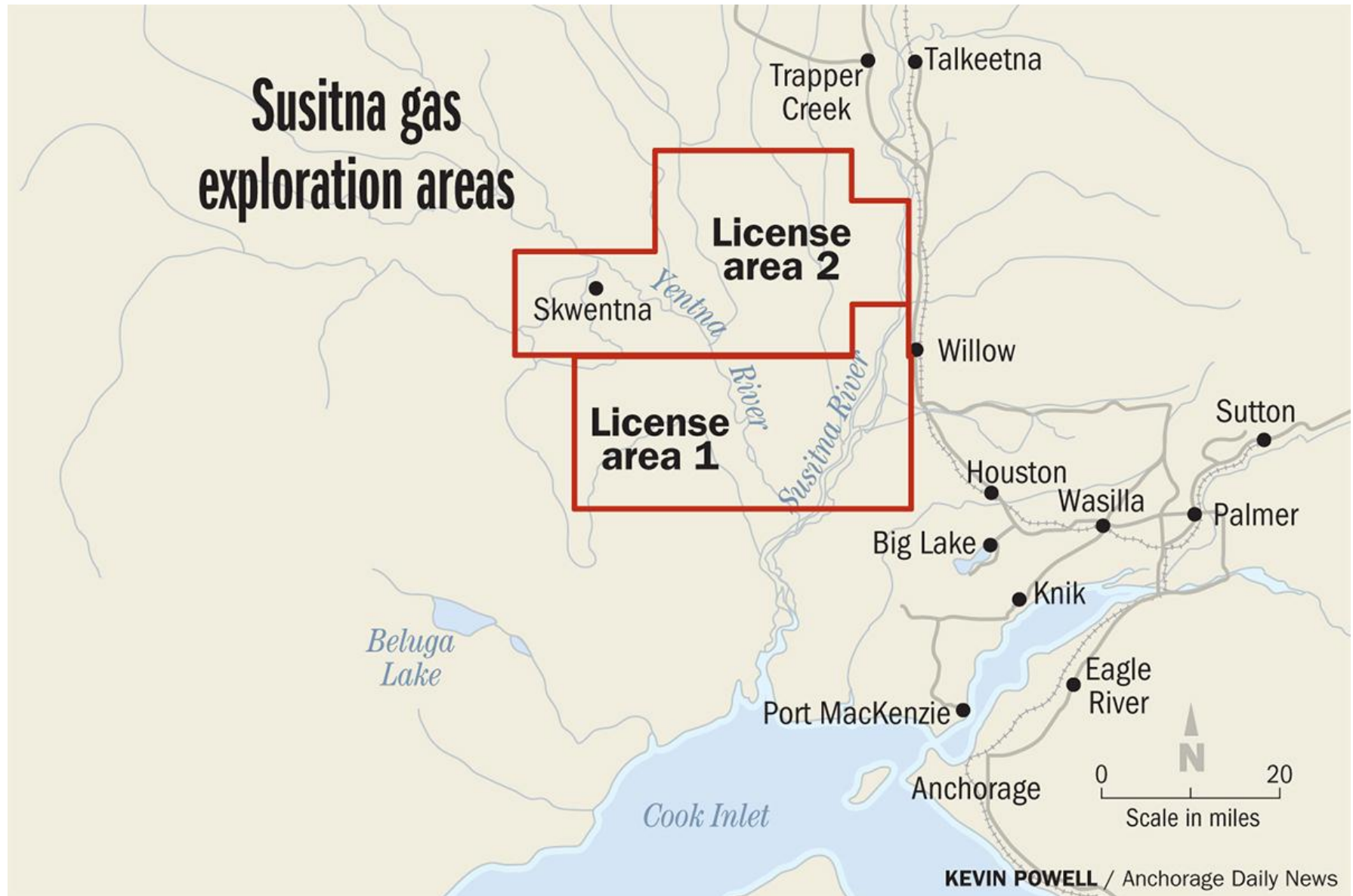
## State prepping to approve broad Susitna gas exploration licenses

**By: Elwood Brehmer** (</authors/elwood-brehmer>),

Alaska Journal of Commerce

Post date: Wed, 01/19/2022 - 9:27am





State regulators are initially backing a proposal to award nearly a million acres in the Susitna River valley to an Anchorage company on the long hunt for unconventional sources of natural gas after years of review.

Division of Oil and Gas Director Tom Stokes in mid-December issued a detailed preliminary best interest finding ([/sites/alaskajournal.com/files/files/10\\_Dec\\_2021\\_BIF\\_Document\\_Preliminary\\_Finding.pdf](/sites/alaskajournal.com/files/files/10_Dec_2021_BIF_Document_Preliminary_Finding.pdf)), that, if finalized, would approve two natural gas exploration licenses giving exclusive gas exploration rights to Alaska Natural Gas Corp. over 915,493 acres for 10 years.

State law limits the area exploration licenses can cover to 500,000 acres, so Alaska Natural Gas Corp. applied for two licenses covering 434,835 acres and 480,658 acres, according to the finding report.

Oil and Gas officials are now extending a public comment period on the finding through Feb. 21. Spokesman Sean Clifton said the division had received one comment on the license through Jan. 14 and some residents of the large area asked for more time to review the lengthy document.

Anchorage-based Alaska Natural Gas Corp. first applied for the licenses in April 2017 following a 2016 determination by then-Oil and Gas Director Corri Feige that all state-owned acreage in Southcentral would be available for oil and gas exploration licensing.

Feige is now commissioner of the Department of Natural Resources, which houses the state Division of Oil and Gas.

Advertisement

Approximately 71% of the proposed exploration areas are state land, according to the finding.

Division officials spent the intervening years compiling the 312-page best interest finding, which concludes that the company is most likely to find coal bed methane deposits found within coal seams scattered across the area. It's currently assumed Alaska holds more than 1 trillion cubic feet of coal bed methane statewide, though how much of it is feasible produce is unclear.

Methane is the base molecule of natural gas.

"Economically producible coal bed methane is an attractive alternative to diesel fuel, which is the main energy source for home heating and electrical power generation throughout much of rural Alaska," the finding states.

Coal bed methane is typically produced from coal seams after groundwater is pumped out, which depressurizes the deposits and allows the gas to flow to the surface more freely.

The two licenses also come with a one-time, \$1-per-acre license fee and work requirements of \$3 million and \$3.3 million. Alaska Natural Gas Corp. originally applied for work commitment amounts of \$500,000 each, but that does not reflect the current economic climate and the likely costs of conducting fieldwork necessary to meet the requirements of the licenses, according to the finding.



State business records indicate Alaska Natural Gas Corp. is led by Robert Fowler; however, Fowler did not return multiple requests for comment in time for this story.

The company's website states Alaska Natural Gas Corp. "is developing itself into a coal bed methane (CBM) producer" that uses horizontal drilling techniques to minimize its development footprint and maximize its gas production capability.

Australian-based Linc Energy explored coal deposits on the west side of Cook Inlet not far south of the Susitna area in the early 2010s to no avail. Other small-scale gas exploration programs have been conducted largely in the southern Susitna Valley over the years as well.

Alaska Natural Gas Corp.'s combined license areas cover much of the western half of the Susitna Valley, from south of Willow to near Peters Creek in the north and beyond Skwentna to the west. The western portions of the license areas are also in the vicinity of route options for the West Susitna Access road project proposed by the Matanuska-Susitna Borough and backed by Gov. Mike Dunleavy's administration.

*Elwood Brehmer can be reached at [elwood.brehmer@alaskajournal.com](mailto:elwood.brehmer@alaskajournal.com) (mailto:elwood.brehmer@alaskajournal.com).*

**Updated:** 01/19/2022 - 9:27am

**Alaska Journal of Commerce**

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## W.A.C.O. COMMENT LETTER - SU GAS EXPLORATION



February 5, 2022

State of Alaska Department of Natural Resources  
Division of Oil and Gas  
Best Interest Findings  
550 West 7<sup>th</sup> Avenue, Suite 1100  
Anchorage, AK 99501

Re: Comment on Susitna Valley Gas Exploration License; Preliminary Written Finding.

Whomever It May Concern,

The Willow Area Community Organization (WACO), a community council recognized by the Matanuska-Susitna Borough (MSB), would like to respond to the State's request for comment regarding proposed Coal Bed Methane (CBM) exploration in the Susitna Valley. Because the area being considered for exploration includes a significant portion of our residential and recreational community, we have special interest in such development and the impacts it may have.

In response to the 2017 solicitation on exploration for oil and gas in the Susitna Valley Solicitation Area, WACO requested the lands within our community council area be excluded from exploration. After WACO's further consideration of the December 10, 2022 Preliminary Written Findings, in two public meetings, our request remains the same. We believe that the intensive industrial activities associated CBM development would have severe adverse effect on private property, businesses, local roads, recreation opportunities, and wildlife habitat within our community. Of grave concern is the effect of CBM activities on salmon habitat.

Our 2017 letter explained that land use within WACO boundaries is addressed by the Willow Comprehensive Plan and many land use plans which overlap with the exploration area. The 2017 letter also includes legislatively designated areas that are managed for public recreation and habitat protection. Please include this letter as part of our current comments.

According to the Preliminary Written Findings on pages 8-11, development of CBM would, among other things:

- Require 10 to 20 CMB wells at densities of 40, 80 or 160 acres
- Result in large development of roads, well pads, pipelines, fuel tanks.
- Produce and dispose of huge quantities of water containing trace amounts of toxic metals.



This intense industrial development and possible adverse consequences even with mitigation measures simply has no place within our community. Indeed, 92% of the comments to the 2017 solicitation were opposed to the exploration due to impacts to property values, tourism, recreation and habitat. Bringing any such development within an Alaskan community without their general consent and contrary to community plans and the Southeast Susitna Area Plan is not in the best interest of the State.

The licensee, Alaska Natural Gas Corporation, does not appear to have the resources or experience necessary to complete the work commitment established, \$3,000,000 and \$3,300,000 for each license, in Section 1-4 of the Preliminary Written Findings. How is it in the best interest of the State of Alaska to grant licenses to an entity with no demonstrated ability to meet the work requirements especially considering the importance and value of the surface land uses and considering the risk to salmon.

The License Areas include populated areas within the WACO boundaries. Why not limit the licenses to State owned property while the feasibility of extracting methane is determined? Individual property owners and local businesses will likely be first impacted by exploration activities due to their proximity to the road system. These individual property owners have not been notified directly about the issuance of the licenses. Why not?

Due to public concerns over CBM development in 2004, the Matanuska-Susitna Borough passed Ordinance MSB 04-175(AM) which established MSB 17.62 in Borough code, which requires CBM development to follow the Conditional Use Permit process. The ordinance further addresses issues such as setbacks from waterbodies and public facilities, land use regulations, noise and many other concerns. WACO requests the State would recognize and require these mitigation measures in regards to any CBM development.

Because the WACO area is such a small portion of the total exploratory area, has a high residential population with a high level of public recreation use due to its pristine natural environment, CBM development would conflict with the Willow Comprehensive Plan and that there are alternative areas for exploration, we find CBM exploration within the WACO boundaries is not in the best interest of the State. We are therefore requesting the land within WACO's boundaries be excluded from exploration for Coal Bed Methane.

Sincerely,

Linda Oxley, Chair  
Willow Area Community Organization



## WATER RESERVATION - COTTONWOOD CREEK LETTER



THE STATE  
of **ALASKA**  
GOVERNOR MIKE DUNLEAVY

## Department of Natural Resources

DIVISION OF MINING, LAND & WATER  
Water Resources Section

550 West 7th Avenue, Suite 1020  
Anchorage, Alaska 99501-3579  
Main: 907.269.8600  
TDD: 907.269.8411  
Fax: 907.269.8904

**To:** Distribution  
**From:** Kimberly Sager

**Date:** February 4, 2022  
**Phone:** 907.269.2033  
**Fax:** 907.269.8904  
**Email:** kimberly.sager@alaska.gov

**Subject:** Reservation of Water Review  
Alaska Department of Fish & Game; Cottonwood Creek– LAS 11972

Alaska Department of Fish and Game has a Reservation of Water certificate on Cottonwood Creek, near Wasilla, Alaska. The file number for this certificate is LAS 11972. The Alaska Department of Natural Resources (DNR) is currently reviewing this certificate per 11 AAC 93.147, which requires Reservation of Water certificates be reviewed.

DNR is soliciting comments on this reservation review to assist in the review process and decision. Details are contained in the public notice. Upon your request, I can fax or email you the certificate, mentioned above.

This message constitutes DNR's Agency Notice as required under AS 46.15.133 and 11 AAC 93.080. You are invited to review the subject certificate and provide any comments you have regarding this Reservation of Water before **5:00 p.m., February 22, 2022**. If I do not receive any response, it will be assumed to mean that you have no objections or information to provide regarding this certificate.

If you have any questions, please contact me at (907) 269-2033 or [kimberly.sager@alaska.gov](mailto:kimberly.sager@alaska.gov).

Thank you for your attention to this matter.

*Kimberly Sager*

Kimberly Sager  
Natural Resource Specialist  
Reservation of Water Program Lead

## Notice for Reservation of Water Review

### Cottonwood Creek, LAS 11972

Pursuant to Alaska Administrative Code 11 AAC 93.147 and the rules and regulations promulgated thereunder, notice is hereby given that a Reservation of Water certificated on May 15, 1991, to Alaska Department of Fish and Game, 333 Raspberry Road, Anchorage, Alaska, 99518, to reserve water within Cottonwood Creek, near Wasilla, Alaska, for the purpose of maintaining specified instream flow rates to protect fish and wildlife habitat, migration, and propagation is being reviewed by the Alaska Department of Natural Resources (Department). This reservation of water is described below:

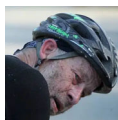
**Cottonwood Creek:** *The stream flow within Cottonwood Creek from River Mile (RM) 3.25 upstream to approximately RM 10.75. Said each of Cottonwood Creek is located within Section 36, Township 17 North, Range 2 West, and Sections 10, 11, 15-17, 19, 20, 30, & 31, Township 17 North, Range 1 West, Seward Meridian, Palmer Recording District. This Reservation of Water, with a priority date of July 14, 1988, allocates water as follows (cfs = cubic feet per second): **Nov 1 – Jun 30:** 7.0 cfs, and **Jul 1 – Oct 31:** 8 cfs.*

A reservation of water is an appropriation of water that remains within the stream or lake. Information about these specific conditions or about any other aspect of this reservation of water may be obtained from the Department by contacting Kimberly Sager at (907) 269-2033 or by email at kimberly.sager@alaska.gov. This notice is being published in order to solicit information that might be pertinent to the review of this Reservation of Water Certificate and any information must be submitted in writing by email, fax, or mail to the Department of Natural Resources, 550 West 7<sup>th</sup> Avenue, Suite 1020, Anchorage, Alaska 99501-3514 **no later than February 22, 2022 before 5:00 PM to be considered.**

The Alaska Department of Natural Resources complies with Title II of the American with Disabilities Act of 1990. The State is prepared to accommodate individuals with disabilities by providing aids when requested. Individuals with audio impairments who wish to respond to this notice by telephone may call the Departments Public Information Center in Anchorage between the hours of 10:00 AM and 5:00 PM, M-F at TDD # 269-8411. The right is reserved to waive technical defects in this publication.

Kimberly Sager, Natural Resource Specialist

C.M. ARTICLE, 1/27/22: AND THE WINNERS ARE...



# Craig Medred

A HOME FOR READERS AND THINKERS

TUESDAY, FEBRUARY 8TH, 2022

COMMENTARY

## And the winners are....

BY CRAIGMEDRED ON JANUARY 27, 2022 • ( 4 COMMENTS )



One of the big conclusions to be drawn from the Alaska Seafood Marketing Institute's (ASMI) 2022 report

on “The Economic Value of Alaska’s Seafood Industry” ([https://www.alaskaseafood.org/wp-content/uploads/MRG\\_ASMI-Economic-Impacts-Report\\_final.pdf](https://www.alaskaseafood.org/wp-content/uploads/MRG_ASMI-Economic-Impacts-Report_final.pdf)) is that the people involved in fish farming and wild fish management in the 49th state are doing a whole lot better economically than the people catching fish.

The newly issued report shows that in 2019 those working in hatcheries and management made almost twice as much money per year as the people commercially netting fish in the ocean.

Technically, Alaska in 1990 banned salmon farming, (<https://craigmedred.news/2019/10/13/the-failed-ban/>) but that only covered the net-pen style which began in Norway before surging into life as a big global business in the 1980s. ([https://thefishsite.com/articles/the-world-salmon-farming-industry#:~:text=The%20origins%20of%20salmon%20farming,both%20Europe%20and%20North%20America.&text=The%20modern%20techniques%20of%20salmon,Norway%20in%20the%20late%201960s.](https://thefishsite.com/articles/the-world-salmon-farming-industry#:~:text=The%20origins%20of%20salmon%20farming,both%20Europe%20and%20North%20America.&text=The%20modern%20techniques%20of%20salmon,Norway%20in%20the%20late%201960s.))) By then the 49th state was already deep into farming the sea with its hatchery production of free-ranging Pacific salmon already exceeding that of all other West Coast states combined.

Alaska hatchery supporters prefer to call this activity “salmon ranching” rather than “salmon farming,” which has long been under fire from environmentalists for polluting bays with salmon feces and uneaten feed; tainting the water in places with chemicals intended to treat the penned fish to keep them healthy; encouraging the spread of sea lice, a common salmon parasite, to wild fish; and allowing Atlantic salmon, the main net-pen product, to escape into the Pacific.

(<https://ecohustler.com/article/chemical-seas-the-rise-and-fall-of-salmon-pharming-in-scotland>)

Alaska legislators banned net-pen farming in part to deal with the headache of regulating farms to prevent environmental problems, but mainly in the belief the state could control the salmon market.

Alaska was at the time the biggest salmon producer in the world, and it was thought that keeping salmon farms out of Alaska bays and Inlets would hold down global production.

That idea proved badly wrong. Farmed salmon now own the market.

The World Wildlife Fund (WWF), a nongovernmental organization that has for years been pushing net-pen farmers toward more responsible management, today calculates that 70 percent of the salmon eaten around the world come from farms where they are raised in either net pens

or increasingly in enclosed tanks in land-based facilities that avoid the environmental and salmon-escape problems ocean farmers face. (<https://www.worldwildlife.org/industries/farmed-salmon>)

The remaining 30 percent share of the market is largely split between Russia and Alaska with salmon production in British Columbia, Canada, and along the U.S. West Coast now relegated to a footnote in the data.

The ASMI report didn't highlight the wages to be made in farming salmon in Alaska, but a reader of the organization's annual report doesn't need to be a math wizard to spot the significant earning differences in the fishing business. Here are the numbers:

### Seafood Industry Impact on Alaska's Economy, 2019

Direct Impacts			Total Impacts	
	Number of Workers	Labor Income		
Commercial Fishing	31,300	\$1.01 billion	FTE Jobs (Full-Time Equivalent)	37,400
Processing	27,100	\$495 million	Labor Income	\$2.2 billion
Management/Hatcheries/Other	3,800	\$239 million	Economic Output	\$5.7 billion
<b>Total</b>	<b>62,200</b>	<b>\$1.75 billion</b>		

Note: Figures may not sum due to rounding.

Those 3,800 people in management and hatcheries collecting \$239 million would be banking average annual earnings of about \$62,895 per person. These are not quite oil-industry-size wages, but the earnings are almost twice the \$36,787 the U.S. Census reports as the average for workers in Alaska in 2019. (<https://www.census.gov/quickfacts/AK>)

Oil industry workers earn about two and a half times the state average, according to the Alaska Resource Development Council, which is what makes the oil industry such a big part of the state economy. (<https://www.akrdc.org/oil-and-gas>)

Most of those in the fishing industry - the management and hatchery workers being the exception - are sort of on the opposite end of the scale from those in the oil patch, according to the ASMI numbers.

In the processing business, 21,700 people earning \$495 billion works out to annual earnings of about \$22,811 per person. That's \$79 below the poverty line for a couple living in Alaska



(<https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines>), and more than \$6,000 shy of the poverty line for the average American-size family now said to number 3.15.

(<https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/>)

The good news is that these earnings do go farther in other states and even more so in many other countries, and the Alaska Department of Labor reports that “Alaska imports around 75 percent of its seafood processing workers.”

“Some processors hire workers from around Alaska, but most of their employees come

(<https://labor.alaska.gov/trends/nov21.pdf>)

from out of state or are foreign workers under the H-2 visa program,” according to the agency’s November 2021 issue of Alaska Economic Trends. “For every Alaskan working in the plants, processing companies import three from outside the state.”

More than 3,000 of those workers come from the so-called Northern Triangle countries of El Salvador, Guatemala, and Honduras, according to the Cato Institute.

(<https://www.cato.org/sites/cato.org/files/2021-11/SEA%20letter%20to%20Mayorkas%202021.pdf>)

The cost of living for a couple in El Salvador, which uses the U.S. dollar as its national currency, is less than \$11,200 per year, not counting rent, according to the Travel Tables calculator.

(<https://traveltables.com/country/el-salvador/cost-of-living/>) This would obviously make fish processing earnings collected in Alaska go a lot farther.

And the cost-of-living is much the same in the other North Triangle countries. The downside is that they are all plagued by what the Council on Foreign Relations calls a “complex criminal ecosystem.” (<https://www.cfr.org/background/central-americas-turbulent-northern-triangle>)

Still, a low-paying job in Alaska has to be considered a welcome escape for any Northern Triangle resident who can land one.

## Alaska fishermen doing better

Commercial fishermen working in Alaska – about two-thirds of whom claim to be Alaska residents – are luckily much better off than workers in the processing plants. The 31,300 skippers and crew earning \$1.01 billion in 2019 works out to average annual earnings of just over \$32,268

dollars per fisherman or about \$4,520 less than that \$36,787 the U.S. Census reports as the average for the state.

Unfortunately, Alaska resident fishermen get the short end of the stick in this accounting, given the distribution of this income. Fishermen claiming Alaska residency made up 63 percent of the state's commercial fleet in 2019, the ASMI report says, but they collected only 39 percent of the revenue.

These percentages would put the number of Alaska resident fishermen at 19,719 with their combined earnings at just under \$394 billion. These numbers work out to an average annual income of just slightly under \$19,976 per person or about a quarter of what the average oil-field worker earns in a year.

This average is, however, misleading in that some of the state's fisheries are far more valuable than others, and commercial fishermen who hold limited entry permits tend to earn far more than the crews who work for anyone.

The broad differences in potential earnings in the fisheries are well represented in the prices paid for state limited entry permits, which are privately owned by commercial fishermen and can be bought and sold in an open market.

Copper River Boats & Permits, a business that markets limited-entry permits, today had a Lower Yukon River salmon driftnet permit available for \$10,000 (<https://crboats-permits.com/alaska-permits-for-sale/#lower-yukon>) while the asking prices on Prince William Sound seine permits ranged from \$193,000 to \$265,000 with package sales to include a boat and permit to fish the Sound in the range of \$395,000 to \$535,000. (<https://crboats-permits.com/alaska-permits-for-sale/#pws>)

Seiners have been the big beneficiaries of a state hatchery program originally set up to produce "common property" salmon for all fisheries, but since turned over to private, nonprofit corporations controlled by commercial fishermen who primarily raise pink salmon to be caught in the commercial fishery and to pay the costs of hatchery employees and operations.

"In 2019, the commercial fleet caught about 50 million hatchery-produced salmon worth an estimated \$118 million dollars in ex-vessel value," according to the Alaska Salmon Fisheries Enhancement Annual Report prepared by the Alaska Department of Fish and Game "Hatchery fish contributed 25 percent of the statewide commercial salmon harvest."

Almost 71 percent of those fish were pink salmon, the smallest and pound-for-pound least valuable salmon in the state, but they do have one big factor going for them.

“Pink salmon are the most economical to rear because they have a short rearing time, one winter in the hatchery, and have the shortest life cycle of Pacific salmon, two years,” the report noted.

“This means pink salmon provide a quick return on investment and provide the highest economic return for the production costs.” (<http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2020.04.pdf>)

#### YOUR HELP IS NEEDED

Real reporting - the kind built on tracking, sorting, analyzing, interpreting and accurately summarizing large volumes of information collected from interviews and documents – is a time-consuming business. Nobody does it unless they have a passion for knowledge, but economics are a reality that cannot be ignored. This site needs your support if it is to continue. So if you find something here that interests, entertains or makes you think, consider a contribution to help keep [craigmedred.news](http://craigmedred.news) alive. Think of it as an opportunity to push back at all that “news” born of government edicts, political propaganda, NGO spin and business promotion riding the river of “news” releases flooding the country. You won’t find much, if any, of that here.

## Growing controversy

Thanks to hatcheries, primarily in Alaska and Russia; management for maximum sustained yield of pinks, and, from most indications, warming waters in the North Pacific, pink salmon have become the dominant salmon in the north.

Especially in odd-numbered years, they outnumber the total of the other five species of salmon combined. They have become so plentiful in odd-numbered years that some theorize that their disruption to the food chain leads to a drop in pink returns in even-numbered years because even-year pinks can’t find enough food to eat.

The theory is far from proven, but Alaska pink salmon harvests, which are dictated by the size of pink salmon returns, have ridden a steady rollercoaster up and down for a decade.

Since 2011, according to Fish and Game data, the odd-year catch of pinks has averaged almost 159 million fish per year – well in excess of the historic annual average harvests of all species of Alaska salmon dating back to the start of the Alaska commercial salmon industry in the late 1800s. (<https://craigmedred.news/2021/11/07/the-salmon-yo-yo/>)

The even-year catch, meanwhile, stands at an average of only 70 million or about 44 percent of the odd-year harvest.



While all of these pinks have been good for seiners who harvest the fish and for processors who've won big government contracts to supply canned pinks for child nutrition and related domestic, food-assistance programs (<https://www.intrafish.com/markets/obi-seafoods-is-52-million-winner-in-massive-us-federal-canned-salmon-purchase/2-1-1150638>), scientists, some environmentalists and even some fishermen have begun to raise questions about what the management of pinks for maximum abundance is doing to bigger, more valuable Chinook (king), coho (silver) and sockeye (red) salmon.

From the southern end of the Alaska Panhandle south to northern California runs of these fish, which compete with pinks for food at sea, are generally withering.

While Alaska has witnessed steady, pink-driven increases in decadal average harvests of salmon – going from an annual average of 122.4 million per year in the 1980s to 180 million per year in the 2010 (<https://craigmedred.news/2022/01/18/angry-canadians/>) – “Pacific salmon populations have been in decline (in Canada) over the past four decades,” Michele Gamage reported in Canada's Hakai magazine in October. “For most of the past century, Canadian fishers caught an annual average of 24 million salmon. That number was cut in half in the early 1990s, and since then has slowly decreased to just two million in recent years.” (<https://hakaimagazine.com/features/fishery-closures-and-the-ghosts-of-past-mistakes/>)

The situation has been much the same in the U.S. Pacific Northwest.

Dams have been blamed. Logging has been blamed. Urbanization has been blamed. Global warming has been blamed. Disease and lice possibly linked to British Columbia's 109 net-pen salmon farms have been blamed, leading the Canadian government to announce plans to transition all the province's salmon farms to land-based operations by 2025, the Vancouver Sun reported in August. (<https://vancouversun.com/news/local-news/dfo-report-suggests-alternatives-to-open-net-salmon-farms-in-b-c-but-next-step-unclear>)

But there are growing indications the big problem might really be in the ocean.

David Welch and colleagues at Kintama Research Services in Nanaimo, B.C. in November 2020 published a peer-reviewed study documenting a 65 percent decline in the productivity of Chinook salmon from Alaska south to Oregon no matter whether the fish were hatched far from any fish farms in wild, glacial fed rivers where the water still runs cold or in areas hit hard by

logging, urbanization, dams, high temperatures and nearby fish farms.

(<https://craigmedred.news/2020/11/02/vanishing-kings/>)

“The abundance of salmon in the North Pacific has reached record levels,” they observed.

“However, most of the increase is in the two lowest valued species (pinks and chums) in far northern regions, at least in part due to ocean ranching.

“In contrast, essentially all west coast North American Chinook populations including Alaska are now performing poorly with dramatically reduced productivity.”

Then came a peer-reviewed study in Global Change Biology in December that reported “evidence that hatchery pink salmon releases negatively affect wild pink salmon productivity, likely through competition between wild and hatchery juveniles in nearshore marine habitats.”

(<https://craigmedred.news/2021/12/28/messing-with-nature/>)

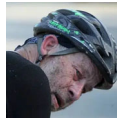
It further warned that “because Pacific salmon migrate long distances at sea, large-scale hatchery production may have unintended adverse effects on other species of salmon originating from distant regions,” as well.

Still, the scientists admitted that passing judgment on Alaska’s massive hatchery program is not easy at this time.

“...Quantifying the tradeoffs between industry performance in the fishery supported by the large hatchery program and productivity and abundance of wild salmon populations within and outside (Prince William Sound) are left for future extensions of this work,” they wrote.

There is no doubt the hatcheries are generally good for the Prince William Sound economy (<https://craigmedred.news/2018/11/05/the-hatchery-case/>) and obviously, according to the new ASMI report, they are good for the people who work in them.

C.M. ARTICLE, 1/29/22: PAINT IT PINK



# Craig Medred

A HOME FOR READERS AND THINKERS

TUESDAY, FEBRUARY 8TH, 2022

COMMENTARY

## Paint it pink

BY CRAIGMEDRED ON JANUARY 29, 2022 • ( 9 COMMENTS )



The Spam (<https://www.eater.com/2014/7/9/6191681/a-brief-history-of-spam-an-american-meat-icon>) of the sea

The North Pacific Anadromous Fish Commission (NPAFC) this week posed a question that has been on the minds of some fisheries scientists for years now:

“Are There Too Many Salmon in the North Pacific Ocean?”

The question is a good one wrongly phrased. It should actually ask this:

“Are There Too Many Pink Salmon in the North Pacific Ocean.”

As is detailed in a six-page report to the Commission that follows the question in the January newsletter, the ocean is now overrun with pinks, the smallest and shortest-lived of the six species of Pacific salmon, five of which are native to North America. (<https://npafc.org/species/>)

“Overall, pink salmon represented approximately 74 percent of total salmon abundance in 2018/2019. Most pink salmon are of natural origin, but abundance of hatchery pink salmon during 2005 to 2015 was greater than abundance of wild chum salmon and approximately equal to abundance of wild sockeye salmon,” the report said.

“Total chum and sockeye salmon represented only 14 percent and 12 percent, respectively, of total salmon abundance in 2018/2019. These values exclude Chinook and coho salmon, whose combined reported commercial catch was 1.5 percent of total salmon catch from the North Pacific during 2018/2019 and approximately 5 percent of total salmon catch, on average, during 1925 to 2020.”

Chinook are those big “kings” – the largest and longest-lived of salmon – that made famous the Columbia River of the Pacific Northwest and the Kenai River of Alaska, a far, far smaller river system than the Columbia that in 1985 produced a world-record king weighing 97-pounds, 4 ounces. (<https://alaskasportshall.org/inductee/les-andersons-king-salmon/>)

For more than a decade that followed, the Kenai became a hunting grounds for anglers from around the globe looking to land a bragging-size trophy king.

“The Kenai River supports the largest freshwater recreational fishery in Alaska...,” the Alaska Department of Fish and Game boasted in a 1995 report. “The majority of the angler-effort occurs in the section of the river between the outlet of Skilak Lake and Cook Inlet during a fishery directed primarily at returning Chinook salmon during May, June, and July.”

(<https://www.adfg.alaska.gov/fedaidpdfs/fds95-12.pdf>)

## All gone

This was the middle of the glory years for the Kenai.

For two decades from 1986 to 2006, the returns of late-run Kenai kings dropped below 40,000 fish a year only once, according to Alaska Department of Fish and Game reports. And in 17 of those years, the return to the relatively small, blue-green, glacier-fed river topped 50,000.

(<http://www.adfg.alaska.gov/fedaidpdfs/fms13-02.pdf>)

Then, in 2004 it peaked near the 100,000 mark. (<http://www.adfg.alaska.gov/fedaidpdfs/fms13-02.pdf>)

Sadly, the end was just over the horizon. In 2008, after five years in which the return to the river averaged more than 80,000 fish per year, the number dropped to 60,000.

There was no cause for alarm. That was still a very healthy number.

The next year it was 51,000; still no cause to worry. But the year after it fell to 39,000; and by 2012, it was under 30,000.

By then, fishery managers had noticed something else odd. The big kings were getting smaller and smaller. Worried about the egg-carrying capacity of smaller females kings, five years later convinced the state Board of Fisheries to change the way Kenai spawners were counted.

Out went the old goal of putting 17,800 to 35,700 kings on the spawning beds, and in came a new rule lowering the minimum to 15,000, but stipulating that only kings over 34 inches in length would be counted. That goal was met the next year when just shy of 17,000 fish made it through the commercial fisheries in Cook Inlet and the sport fisheries in the river.

([http://www.adfg.alaska.gov/sf/FishCounts/index.cfm?](http://www.adfg.alaska.gov/sf/FishCounts/index.cfm?ADFG=main.kenaiChinook&RunSummaryID=265#:~:text=Abundance%20estimation%20of%20Kenai%20River,34%20inches%20in%20total%20length)

[ADFG=main.kenaiChinook&RunSummaryID=265#:~:text=Abundance%20estimation%20of%20Kenai%20River,34%20inches%20in%20total%20length](http://www.adfg.alaska.gov/sf/FishCounts/index.cfm?ADFG=main.kenaiChinook&RunSummaryID=265#:~:text=Abundance%20estimation%20of%20Kenai%20River,34%20inches%20in%20total%20length)).

It has not been met since despite stiff restrictions on sport fishing, reductions in commercial fishing, and sometimes closures of both fisheries. The collapse is in line with a peer-reviewed study published in 2020 that reported Chinook production dropped 65 percent all along the North American West Coast over the course of the last half-century.

(<https://craigmedred.news/2020/11/02/vanishing-kings/>)

That study has proven controversial in that it suggests ocean survival might have as much or more to do with faltering Chinook runs than hydroelectric dams, agriculture, climate change and urban development.

“Intriguingly, the higher smolt-to-adult-return rates (SARs) of the two coastal Oregon sub-yearling populations (in the study) and Chinook from California all involve populations that apparently do not migrate far north,” the authors of that study wrote. “The SARs of California Chinook are particularly noteworthy because freshwater survival is exceedingly low; for overall SARs to be higher than Snake River stocks suggests much higher survival during the marine phase.”



Previous studies of the Oregon stocks in question have found them spending the ocean phase of their lives in the California Current instead of moving north as do Columbia River basin salmon and Canadian fish. They are then caught up in the Alaska Coastal Current which spins counter-clockwise around the Gulf.

“It...seems plausible that specific salmon populations home to distinct feeding grounds, some of which may confer better survival,” the authors of the 2020 study wrote.

The northern Gulf is where it has been theorized problems have arisen because of too many salmon competing for too little food.

#### YOUR HELP IS NEEDED

Real reporting - the kind built on tracking, sorting, analyzing, interpreting and accurately summarizing large volumes of information collected from interviews and documents – is a time-consuming business. Nobody does it unless they have a passion for knowledge, but economics are a reality that cannot be ignored. This site needs your support if it is to continue. So if you find something here that interests, entertains or makes you think, consider a contribution to help keep [craigmedred.news](http://craigmedred.news) alive. Think of it as an opportunity to push back at all that “news” born of government edicts, political propaganda, NGO spin and business promotion riding the river of “news” releases flooding the country. You won’t find much, if any, of that here.

## Smaller and smaller and smaller

The aforementioned Kenai kings could well be the poster fish for shrinking Pacific salmon.

Where once kings of 50 pounds or larger were so common state officials overwhelmed with requests for “Trophy Fish” certificates had to amend the “Trophy Fish” records to make a special exception for Kenai kings requiring they reach 75 pounds or more to qualify for a certificate.

(<https://www.adfg.alaska.gov/index.cfm?adfg=FishingSportFishAK.TrophyFishProgram>)

The standard remained, and to this day remains, 50 pounds for kings caught anywhere else in the state. It could probably now be lowered for the Kenai, too, given how few fish over 50 pounds are now caught there.

The problem, however, isn’t just in the Kenai.

The shrinking size of Chinook is a well-documented, coastwide phenomenon. A peer-reviewed paper published in the journal Fish and Fisheries in 2018 documented a steady, almost two-decade decline in the size of the big fish. (<https://craigmedred.news/2018/03/12/shrinking-salmon/>)

And kings aren't the only Pacific salmon getting smaller. A peer-reviewed paper published in Nature Communications in 2020 reported significant declines in the size of coho (silver) and sockeye (red) salmon as well since the 1980s. (<https://craigmedred.news/2020/08/21/a-deprivation-diet/>)

That study fingered the growing abundance of pink salmon as a potential issue.

After examining a dozen reasons why bigger, longer-lived salmon might be getting smaller, the team of researchers from Alaska; British Columbia, Canada; Washington state, California and the Virginia Polytechnic Institute said the only consistently negative effect they could find “across all species was that of Alaskan pink salmon abundance, although this effect was weak in most species. (<https://craigmedred.news/2020/08/21/a-deprivation-diet/>)

“(But) intriguingly, the shared acceleration of size declines post-2000 occurred during a period of unusually high (though variable) pink salmon abundance in Alaska, suggesting high pink salmon abundances could be accelerating or exacerbating size declines. Our results provide further evidence that wild and hatchery-enhanced pink salmon abundance in the North Pacific has reached such high levels that they appear to be exerting an influence on ecosystem structure and function.”

Fishery scientists for the state of Alaska – which in the late 1970s and early 1980s built a massive hatchery system to farm the ocean before largely turning it over to commercial fishermen to run – defend free-range ranching the pasture of the North Pacific with predominately pinks and chums by offering up the old scientific truism that the correlations between pink numbers and declines in the size and number of other salmon does not prove causation.

(<https://craigmedred.news/2018/10/17/win-for-ak-hatcheries/>)

And indeed that is true, but correlation is most certainly a cause for investigation.

Particularly when the size and falling production facing Alaska's most famous salmon river fades when compared to the problems facing the Columbia River basin with its long, rich history of huge runs of Chinook and British Columbia, where the Fraser River was once famous for sockeye returns that sometimes outnumbered those of Alaska's Cook Inlet and the state's fabled Copper River combined.

No more.



A sockeye return of 34 million to the Fraser in 2010 has steadily declined since and hit rock bottom in 2020 when Canadian salmon managers reported only 293,000 of the fish returned (<https://www.castanet.net/news/BC/311618/Fraser-sockeye-returns-lowest-since-records-started-being-kept-in-1893>) – less than 1 percent of the number a decade before.

“...Three of the last five years will have had record-breaking low returns for Fraser River sockeye,” the Narwhal, a Canadian environmental publication reported that year. Reporter Stephanie Wood suggested sea lice from Canadian fish farms might be the cause or warmer ocean temperatures or overfishing in Canadian waters or a landslide that cut-off access to some spawning habitat (<https://thenarwhal.ca/low-fraser-river-sockeye-salmon-bc/>).

A team of researchers led by Brendan Connors from the Institute of Sciences of Fisheries and Oceans Canada the same year offered some different explanations.

As noted in the NPAFC report, his team of researchers found that a “1.5-degree Centigrade (about three degrees Fahrenheit) increase in sea-surface temperature was associated with a 23 percent increase in sockeye productivity in the Bering Sea, a 9 percent productivity increase in the Gulf of Alaska, but with a 12 percent decline in productivity in the southern region (British Columbia and Southeast Alaska).”

The warm water improvements in survival, however, came with a significant pink salmon offset.

“The research by Connors et al. (2020) also found that a 119 million increase in pink salmon abundance was historically associated with a 9 percent decline in sockeye productivity in the Bering Sea and the Gulf of Ala

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ska, and a 21 percent decline in British Columbia,” the report said.

“This finding is consistent with a trophic cascade caused by abundant pink salmon and other studies indicating adverse effects of pink salmon on the growth, age-at maturation, survival, and abundance of sockeye salmon, Chinook salmon, coho salmon, chum salmon, marine fishes, seabirds, and potentially southern resident killer whales.”

The work of Connors and colleagues indicated sockeye returning to streams in Southeast Alaska and those farther south were getting hit with a double whammy: First that 23 percent decrease

due to warming waters, and then on top of that a 21 percent decline due to competition with pink salmon.

## Speculation

But, of course, correlation is not causation.

Declines in the size of Chinook, sockeye and coho due to competition with pinks is all theory. So, too, the idea North Pacific salmon are shrinking in size due to this competition.

At this time, no one can produce enough evidence to be able to prove to the standards required by an American court of law that management of pink salmon for maximum production, plus the boosting of their numbers through hatcheries in Alaska and Russia, has directly caused the salmon declines in British Columbia and the Pacific Northwest.

So far, this is all theory pushed by scientists to the south of Alaska where salmon runs are facing serious declines. Connors, it should be noted, was one of the authors of the report to the NPAFMC along with James Irvine, another British Columbia-based scientist, and Greg Ruggerone from Washington state.

It could be they are unfairly blaming Alaska fishery managers for helping to stuff the North Pacific with pinks. Bill Templin, the chief fisheries scientist for the Alaska Department of Fish and Game, seems to believe that. He has publicly questioned some of their science.

At a state Board of Fisheries meeting in 2008, he attacked the theory of a “trophic cascade” as a hypothesis pushed far beyond the edge of the evidence. Scientists know little about what happens once salmon disappear into the big black box of the Pacific, he told the people who write Alaska’s fishing laws, and thus no one can say for certain whether adding large numbers of hatchery pink salmon to the ocean is hurting other fish. (<https://craigmedred.news/2019/09/05/salmon-bounty/>)

In their NPAFC report Ruggerone, Irvine and Connors now counter that “additional evidence of adverse interactions between pink salmon and other species is shown by the biennial patterns in marine species that are consistent with the biennial pattern in pink salmon; a pattern that cannot be explained by physical oceanography alone.”

The clincher, they add, might be a “tipping point” reached in 2020 when salmon runs crashed Pacific-wide. Total salmon abundance, which averaged 806 million adults per year from 2016 through 2019, dropped to an estimated 454 million in 2020.

The tipping-point hypothesis follows basic range theory. A plague of European rabbits, as in Australia, devours so much of the food on the range that not only do rabbits start dying but a lot of sheep and cows are done in as well. (<https://www.nationalgeographic.org/article/how-european-rabbits-took-over-australia/>)

The ocean, thankfully, appears more resilient than the land. For one thing, there is no dirt to blow away after the ground is denuded.

Pinks, at least, bounced back strongly in 2021.

“Commercial harvests of pink salmon in Alaska and Russia rebounded and led to the largest harvest of pink salmon on record since 1925 (approximately 515 million pink salmon, all regions combined),” the researchers reported to the NPAFC.

It was, however, a different story for the bigger species that spend more time at sea.

“In contrast, overall commercial harvests of Chinook, chum, and coho salmon, as well as non-Bristol Bay sockeye salmon, remained low throughout Asia and North America during 2021,” Connors, Irvine and Ruggerone observed. “Relative to harvests during 2010 to 2019, chum salmon harvests declined the most ( minus 38 percent), followed by Chinook (minus 33 percent), coho ( minus 25 percent ) and sockeye salmon beyond the Bristol Bay and the Alaska Peninsula management area (minus 27 percent).

“In British Columbia, harvests of all five species appear to have been very low in 2021, with preliminary estimates of total commercial harvest being less than 10 percent of the average harvest during 2010–2019.”

This could all be due to no more than a massive shift in the currents of the ocean’s whims.

“The jury is still out on the validity of our tipping point hypothesis in which the combined effects of high back-to-back pink salmon abundance (2018 and 2019) and frequent marine heatwaves led to large reductions in the abundance of all species in 2020,” the scientists admitted. “The record-high harvest of pink salmon in 2021 represented approximately 81 percent of all salmon

harvests, and approximately 87 percent of all harvests if the large harvest of Bristol Bay sockeye salmon are excluded.”

It remains to be seen what this will mean for other species of salmon who spend years instead of months at sea. Time will tell.

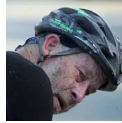
As the scientists observed, “the exceptional abundance of pink salmon in 2021 raises the concern for rapid recovery of salmon in many regions, but it is difficult to predict whether high pink salmon abundance will exacerbate poor feeding conditions for other salmon species in the near future or partially offset the benefit of favorable ocean conditions if conditions improve.

“Regardless, with such high abundances of pink salmon returning from the North Pacific as it warms and their effect on the growth and survival of other salmon species, we ask: are there too many salmon in the ocean and if so, should hatcheries continue to release up to 5.5 billion salmon each year of which nearly 1.5 billion are pink salmon?”

The question is now left to be pondered by the the NPAFC, a treaty organization of which the U.S., Canada, Japan, the Republic of Korea, the Russian Federation are members. It is tasked with promoting “the conservation of anadromous stocks (Pacific salmon and steelhead trout) in the... international waters of the North Pacific Ocean and its adjacent seas north of 33 degrees North (and) beyond the 200-mile zone (exclusive economic zones) of the coastal states.” (<https://npafc.org/>)

Even if it were to answer “yes” to that question of “too many” salmon in the North Pacific, there appears there is little it could do to change the behaviors of the member countries.

C.M. ARTICLE, 2/8/22: SEARCHING FOR ANSWERS



# Craig Medred

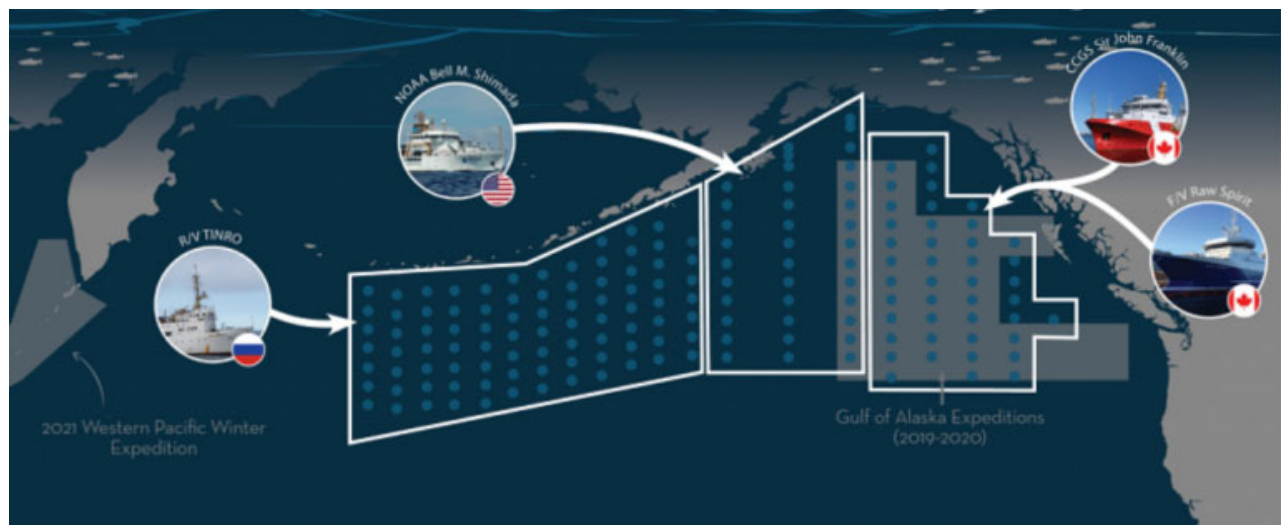
A HOME FOR READERS AND THINKERS

TUESDAY, FEBRUARY 8TH, 2022

NEWS

## Searching for answers

BY CRAIGMEDRED ON FEBRUARY 6, 2022 • ( LEAVE A COMMENT )



Study zones for the 2022 Pan-Pacific Winter High Seas Expedition/NOAA Fisheries

Nudged into action by near unbelievable early findings of privately funded probes into the secret lives of Pacific salmon, the U.S. National Oceanic and Atmospheric Administration (NOAA) has announced it is this winter going all-in in on the ocean research initiated in 2019 by Canadian scientist Dick Beamish. (<https://www.fisheries.noaa.gov/west-coast/2022-pan-pacific-winter-high-seas-expedition>)

The expeditions Beamish helped organize have produced groundbreaking and baffling insights into fish behavior that the 79-year-old scientist now believes could “completely change how we think about salmon.”

A soon-to-be octogenarian still possessed by a boyish curiosity as to how the natural world works, Beamish was a key player in helping to raise \$1.3 million to help send the Russian Research vessel Professor Kaganovsky to sea in 2019 with an international team of scientists to begin serious study of what has long been the black box of salmon life-history.

Their scientific sampling that year and again in 2021 found, among many things, a large congregation of coho salmon in the southern Gulf of Alaska that proved to be made up of stocks from the Pacific Northwest, British Columbia, Alaska and Russia.

All indications are that cohos from around the Pacific Rim gathered in a massive school there, and examinations of their scales indicate they appeared to grow little over-winter, Beamish said.

It looked, he explained, like coho came from all points of the compass to gather in an unheralded ball of fish that basically hibernated for the winter, but more and better scale samples are needed to help confirm the latter observation.

The Canadian Coast Guard research ship Sir John Franklin and the Canadian trawler Raw Spirit are headed back into that gathering area this winter to help collect more scales as part of what is being billed by the U.S., Canadian and Russian government as the 2022 Pan-Pacific Winter High Seas Expedition.

## Added firepower

The resources now in play are major upgrades from the first expedition aboard a 35-year-old, weather-beaten Russian research vessel Fabian Dawson at Sea West News described as “not look(ing) like much” and defined as seasoned by her “peeling paint and sea scars.”

(<https://seawestnews.com/scientists-set-sail-to-unlock-salmon-secrets%E2%82%AC%80%2F/>)

This year NOAA is sending to sea the Bell M. Shimada – a 209-foot, state-of-the-art research vessel commissioned in 2010 and based in Newport, Ore. (<https://www.oma.noaa.gov/learn/marine->



operations/ships/bell-m-shimada)It will team with Canadian and Russian ships in a Gulf-wide search for salmon.

“Research ships from the United States, Canada, and Russia will set out into one of the roughest oceans in the world to unravel a mystery,” according to a NOAA media release: “What determines whether salmon that migrate across the North Pacific come back alive?”

How NOAA decided to this year jump into this ongoing research is unclear. NOAA scientists were over the summer seeking space on Canadian ships in the belief that previously requested NOAA assistance was a no-go.

Then came word from Washington, D.C. that the Bell M. Shimada would join the Canadians and Russians in their investigations.

The ship was specifically designed for studying “a wide range of marine life, sea birds, and ocean conditions along the U.S. West Coast from Washington State to southern California,” according to the NOAA website, but it is now headed far offshore into the central Gulf of Alaska.

The plan is to hunt for immature salmon in an approximately 300-mile wide swath of ocean stretching south for hundreds of miles from a line roughly between Cordova, Alaska, and the middle of the Alaska Peninsula with a lower Gulf of Alaska boundary near the latitude of the mouth of the Columbia River.

The Canadians, meanwhile, will be investigating the sector of the Gulf east of Cordova and then south in the offshore waters off the Lost Coast

(<https://www.nationalgeographic.com/adventure/article/alaskas-lost-coast-welcome-to-the-last-frontier>), the Alaska Panhandle, the Province of British Columbia, and the states of Washington and Oregon – basically the area in which the Professor Kaganovksy worked in the past.

(<https://craigmedred.news/2020/06/22/secret-lives/%20%E2%80%8E>)

To the west of the Canadians and the U.S., the Russians are sending the research vessel Tinro to explore the waters south of the Aleutian Island chain.

Beamish expects more surprising findings, and admits some of what has been found so far has scientists scratching their heads. That big congregation of coho from all over gathered in the southeastern Gulf was wholly unexpected.

“This behavior overwinter is almost unbelievable,” Beamish said. The schooling raises fundamental questions, starting with the first and most obvious as he pointed out: “How do they find each other?”

The bigger question might be why.

Why do these salmon come all the way from Russia and western Alaska to overwinter in the Gulf of Alaska off British Columbia? Are they drawn there by food supplies? Are they schooling to avoid predation as the juveniles of about 80 percent of fish species do?

([https://dtmag.com/thelibrary/defense-mechanisms-how-marine-creatures-avoid-](https://dtmag.com/thelibrary/defense-mechanisms-how-marine-creatures-avoid-predation/#:~:text=Schooling%20is%20one%20of%20the,fundamental%20role%20in%20schooling%20behavior.)

[predation/#:~:text=Schooling%20is%20one%20of%20the,fundamental%20role%20in%20schooling%20behavior.](https://dtmag.com/thelibrary/defense-mechanisms-how-marine-creatures-avoid-predation/#:~:text=Schooling%20is%20one%20of%20the,fundamental%20role%20in%20schooling%20behavior.)) Or is there some other explanation for their behavior?

Whatever the case, Beamish said it is time for scientists to begin to sort out what happens to salmon in the ocean. The waters in which salmon spend most of their lives have too long been treated as a big, black box into which salmon annually disappear by the billions only to return by the millions.

Or not.

## A complex ecosystem

Some have argued the food web of the Pacific – where the fundamental rule is that big fish eat little fish and species be damned, including your own – is too complicated to untangle

(<https://craigmedred.news/2018/10/17/win-for-ak-hatcheries/>), but that doesn’t mean there isn’t a lot that could be learned.

Already, Beamish said, there are indications that pink and chum salmon generally spend their lives in different areas of the ocean almost as if they had separate home ranges. And it is clear, he said, there is a southern boundary to the range of pinks and chums in the Gulf, but



where exactly the boundary begins and what determines why fish stay north of it remains unclear.

So, too, the interactions between the ranges of the six different species of salmon and how these ranges might be affected by the warmer waters the Gulf witnessed in the past decade when salmon exploded into record numbers overall, but with some species in some areas in steep decline.

The big winners have been pinks, the smallest and fastest-growing of the species, and a fish that has become big business for free-ranging Alaska salmon farmers or ranchers as they prefer to call themselves. (<https://craigmedred.news/2022/01/29/paint-it-pink/>)

Washington-state-based scientist Greg Ruggerone, once a leader of the University of Washington's now 66-year-old Alaska Salmon Program, and Canadian-based colleague James Irvine in 2018 reported that thanks largely to the abundance of pinks, overall Pacific salmon abundance had reached levels never before witnessed in recorded human history.

(<https://craigmedred.news/2020/05/28/reds-in-peril/>)

But their peer-reviewed study published in Marine and Coastal Fisheries

(<https://afspubs.onlinelibrary.wiley.com/doi/full/10.1002/mcf2.10023>) noted that slightly more than two out of every three salmon in the ocean was a pink or what many Alaskans simply call a “humpy” due to the massive humps that form on the backs of male pinks as they move toward the spawning grounds.

“There are more Pacific salmon now than ever before since comprehensive statistics began to be collected in 1925,” the American Fisheries Society said in summarizing the research.

“However, Chinook and coho salmon and steelhead trout are depressed throughout much of their range, representing only 4 percent of total salmon catch.”

In terms of biomass – essentially the weight of all salmon combined – the Ruggerone-Irvine study indicated the ocean's hatchery-boasted production of salmon is near the peak of natural production in the mid-1930s, but the mix of species comprising that biomass has shifted heavily toward pinks, chums and sockeye – the latter's numbers being inflated by a global-warming driven boom in Alaska's Bristol Bay.

Warming has significantly increased the productivity of lakes where young sockeye spend their first year or years of life. As a result Bay sockeye harvests have exploded from an average annual harvest of 10.1 million per year through the period from 1960 to 1982, according to Alaska Fish and Game data, (<https://www.adfg.alaska.gov/fedaidpdfs/afrbIL.211.pdf>) to current harvests sometimes over 40 million per year.

The most recent five-year average, according to Fish and Game numbers, is 40.7 million per season or four times that old, long-term average. Other salmon stocks in Alaska, unfortunately, have not fared as well.

“With few exceptions, since 2007, Chinook salmon runs across the state have been well below the long term average,” according to Fish and Game. “Research has shown that during the recent period of poor production, marine survival has dipped below one percent. This decrease in marine survival, even in the face of some very good freshwater production in several systems, has been driving the downturn in overall adult production.”

([https://www.adfg.alaska.gov/index.cfm?adfg=hottopics.lowchinookruns\\_info](https://www.adfg.alaska.gov/index.cfm?adfg=hottopics.lowchinookruns_info))

Chinook – the Alaska state fish – are the largest of the Pacific salmon, the big kings that made famous the Columbia and Kenai rivers.

## The losing species

“The Columbia is the largest river of the American West, and its annual migrations of Chinook salmon were once spectacles of nature,” according to the National Museum of American History. “These prized fish, some weighing more than 70 pounds, churned the waters as they returned upstream to reproduce.” (<https://americanhistory.si.edu/on-the-water/fishing-living/commercial-fishers/columbia-river-salmon>)

And the Kenai, as all Alaskans know, produced the largest Chinook ever caught with hook and line, a world-record king of 97 pounds, 4 ounces. (<https://alaskasportshall.org/inductee/les-andersons-king-salmon/>)

Chinook returns to both rivers are now shadows of their famous selves, and this is largely true of Chinook rivers south along the West Coast of North America from the Alaska Peninsula to

Oregon.

A peer-reviewed study by David Welch and associates found a 65-percent average decline in Chinook productivity West Coast-wide. (<https://craigmedred.news/2020/11/02/vanishing-kings/>) It applied to the big fish whether they came from watersheds disrupted by hydroelectric dams or logging or urbanization or agriculture runoff or none of those things.

The productivity of Chinook from streams draining wildlands generally fell just as much as that of Chinook from streams altered by the impacts of humankind. The study, Welch said, really leaves only one conclusion.

Something or things are going on in the ocean that reduce king numbers. It has been suggested predation by marine mammals – killer whales, sea lions and seals – could be a problem. Some studies, but not others, have suggested competition with pinks could be a major issue.

In a peer-reviewed paper published in Ecosphere in 2020, researchers in British Columbia and Washington state reported “survival of hatchery Chinook salmon decreased when greater numbers of juveniles were released into the Salish Sea in even (numbered) years when large numbers of pink salmon were present, but increased or remained stable when pink salmon were not present in large numbers (in odd years). This suggests lower, density-dependent survival of juvenile Salish Sea Chinook salmon during even outmigration years.”

(<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.3061>)

A study of Alaska’s Prince William Sound (PWS) found no such connection between pink salmon numbers and the survival of wild Chinook from the Copper River, but reported that “all sockeye salmon stocks examined exhibited a downward trend in productivity with increasing PWS hatchery pink salmon returns. While there was considerable variation in sockeye salmon productivity across the low- and mid-range of hatchery returns (0–30 million), productivity was particularly impacted at higher levels of hatchery returns.

(<https://craigmedred.news/2017/06/06/oil-spill-spared-fish/>)

“We do not know if possible deleterious interactions between hatchery pink salmon and wild sockeye salmon in this study are from predation or competition, or whether they occur in

nearshore or offshore areas. (But) pink salmon feeding may cause a general depletion of prey availability that could impact sockeye salmon without tight spatial overlap of these two species. In this regard, the apparent impact to sockeye productivity may reflect a general increase in pink salmon abundance across the northeast Pacific rather than increased abundance of hatchery pink salmon to PWS (Prince William Sound) in particular.”

The connection between the pink salmon boom and sockeye declines to the east of Alaska’s Bristol Bay and south to the Lower 48 has been attracting increasing attention year by year.

Canadian scientists Brendan Connors and colleagues linked abundant pinks to significant declines in sockeye in non-Alaska waters and specifically fingered hatcheries as a problem.

“From 2005 to 2015, the approximately 82 million adult pink salmon produced annually from hatcheries were estimated to have reduced the productivity of southern sockeye salmon by 15 percent on average,” they reported in the peer-reviewed journal *NRC Research Press*.

(<https://cdnsiencepub.com/doi/pdf/10.1139/cjfas-2019-0422>)

Pinks were reducing sockeyes everywhere, the study concluded, but in some areas the consequences were offset by the benefits of global warming. (Yes, there are some benefits to global warming.)

“...For sockeye at the northwestern end of their range, the same level of hatchery production was predicted to have reduced the positive effects of a warming ocean by 50 percent (from a 10 to a 5 percent increase in productivity, on average),” they wrote.

Other scientists, most notably those who are hatchery boosters, have disputed these conclusions not to mention the theory that there are now so many pink salmon in the Pacific – thanks to a combination of a warming climate and hatchery boosting – that pinks can not only influence the numbers of other salmon but create “trophic cascades” that trigger collapses in various populations of seabirds. (<https://craigmedred.news/2021/11/07/the-salmon-yo-yo/>)

What is happening remains wholly debatable because so little is known about the lives of salmon in the ocean, because hatcheries seem such an easy solution to producing more economically valuable and/or popular salmon, and because humankind has long been of the belief it can improve upon nature.

In fact, in Canada, where salmon runs are in dismal condition, the national government is now proposing a “\$647 million, five-year plan to save collapsing Pacific salmon stocks,” the CBC reported last summer. (<https://www.cbc.ca/news/canada/british-columbia/fed-plan-to-save-pacific-salmon-1.6057761>)

“Fisheries Minister Bernadette Jordan said the goal is not only to stop the decline, but to grow stocks back to abundance.”

Two large, new Canadian hatcheries are a cornerstone of the plan. They are said to be needed because of a loss of habitat, human activity and climate change. The Canadians, whose ast salmon plan called for the country to be producing 140,000 metric tonnes of salmon per year, have apparently missed what has going on at sea.

Hatcheries and the better management envisioned in earlier plans led to a 2021 harvest of about 2,000 metric tonnes of salmon.

Beamish termed this a simply an “absolutely remarkable collapse,” and suggested it’s time someone fins out what is going on in the secret world where salmon spend most of their lives and, more importantly, put on all of their weight.

## The growth zone

Pink salmon fry weigh less than 0.3 grams (0.011 ounces) when they emerge from spawning gravels and head to sea to begin gorging themselves.

(<https://www.arlis.org/docs/vol1/36779294.pdf>) When they return 18 months later, they average anywhere from 2,055 grams (4.53 pounds) to 1,256 grams (2.77 pounds).

To go from 0.3 grams to 4.53 pounds in 18 month, a pink would have to increase its body weight by almost 50 percent every month.

Sockeyes grow bigger – with average weights historically in the range of five and a half to six and a half pounds – but it takes a much longer time for them to gain weight. The predominate sockeye in Cook Inlet, according to Fish and Game, is a fish that has spent a year in freshwater, three years at sea and weighs about 6 pounds, though they have been getting smaller.



Fish and Game records put the average weight of a sockeye in the 2021 commercial harvest at 5.2 pounds.

It is interesting to note weights have gone down as abundance has gone up. The 4.5 pound average weight for pinks, according to Alaska Fish and Game records, dates back to 1976 when Alaska salmon numbers were at record lows. (<https://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisherySalmon.salmonhistoricalharvest>) The entire statewide harvest that year was 50.1 million salmon of which pinks made up 56 percent.

Thirty-eight years later, Prince William Sound alone produced a record harvest of almost twice that size at 99.5 million salmon, but 93 percent of the catch – thanks in significant part to the proliferation of hatcheries in the Sound – was pinks, and they had shrunk nearly 40 percent in size, according to state data. ([https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon\\_landings](https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_landings))

The total statewide harvest that year – 2013 – was 272 million. Eighty percent of those fish were pinks, according to Fish and Game, (<https://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr10102013>) and the statewide harvest of Chinook had fallen to 321,014 of the big fish ([https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon\\_landings](https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_landings)) or but 52 percent of what it was in 1977 when state fisheries were considered to be in crisis.

Given salmon harvests in Alaska – where average catches have increased steadily decade by decade since the 1970s (<https://craigmedred.news/2018/11/11/good-new-days/>) – a warming ocean has clearly benefitted some salmon, but it has not benefited all salmon.

The pivotal, unanswered question is how much of this change is due solely to shifting environmental conditions and how much is due to man's tampering with nature by throwing every more hatchery fish into the seas as the NRC Research paper contends.

And what is “good” or “bad” here is grounded largely in human perceptions. If you're an Alaska who loves humpies, it has all been good, arguably even great. But if you love Chinook, sockeyes and coho, the situation is clearly not so simple and could range from not-so-good all the way to plain old bad.

**CORRECTION:** An early version of this story misidentified Greg Ruggerone's work history.